




3 1761 11726110 7

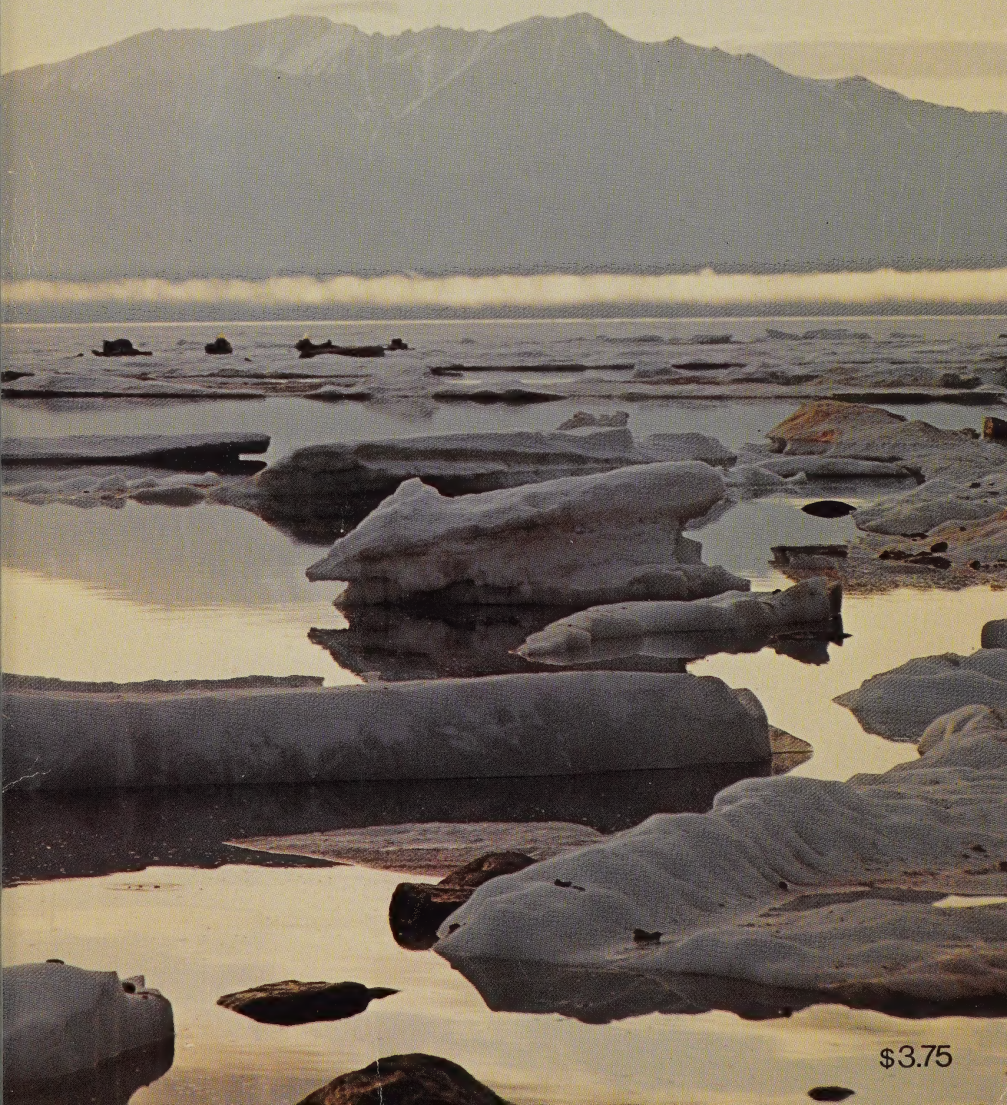


Digitized by the Internet Archive
in 2023 with funding from
University of Toronto

41
S11
C203

D

canada handbook



\$3.75



Statistics
Canada

Statistique
Canada



canada handbook

The 47th annual handbook
of present conditions
and recent progress

Prepared in the
Publishing Section
Information Division
Statistics Canada

*Published under the authority of the
Minister of Industry, Trade and Commerce*



©Minister of Supply and Services Canada 1978

Available by mail from:

Printing and Publishing
Supply and Services Canada
Ottawa, Canada K1A 0S9;

Publications Distribution
Statistics Canada
Ottawa, Canada K1A 0T6;

or through your bookseller.

Catalogue No. CS11-203/1978 Canada: \$3.75
ISBN 0-660-01551-X Other countries: \$4.50
Price subject to change without notice.

Contract No. OKP7 0573

Typesetting: Southam Business Publications Ltd., Toronto

Contract No. OKT7 3540

Printing: Ashton-Potter Limited, Toronto.

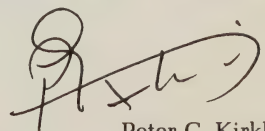


preface

This is the 47th edition of the *Canada Handbook*. It presents a view of life in this country and a summary of recent social, cultural and economic developments, including articles on the physical environment, the people and their heritage, the economy, and governments and their services. Textual and statistical material has been provided by various divisions of Statistics Canada, by other government departments and by special contributors. Illustrations have been selected from a wide range of government, commercial, press and private sources.

Canada is now in the process of converting to the SI (Système internationale) metric system. In support of this movement all relevant amounts in the text of the *Canada Handbook* are expressed in SI only; however, tables are stated in both SI and Imperial (inch-pound) units where applicable. A table giving conversion of selected metric figures into the traditional Canadian units is printed on page 365.

The *Canada Handbook* was planned and produced by Sandra Smart, Editor, and Margaret Smith, Assistant Editor, with the assistance of the staff of the Publishing Section, Information Division.

A handwritten signature in black ink, appearing to read 'P. G. Kirkham', with a stylized flourish at the end.

Peter G. Kirkham
Chief Statistician of Canada

contents

The Environment	viii	Governments and Their Services	290
The Land.....	4	Government	291
The Climate	20	The Legal System	300
The People and Their Heritage ...	30	Citizenship	307
History.....	31	Manpower and Immigration ...	309
Population.....	39	Labour	313
Religion	61	Industry, Trade and	
Arts and Culture	65	Commerce.....	317
Education	96	Regional Economic Expansion..	319
Leisure.....	112	Consumer and Corporate	
Science and Technology	125	Affairs	321
Communications	149	Urban Affairs.....	325
External Relations.....	157	Veterans Affairs	329
The Economy	168	Health and Welfare.....	332
Economic Trends in Canada,		Fisheries and Environment....	343
1976-77.....	169	Agriculture	351
Natural Wealth.....	173	External Affairs.....	356
Employment	210	National Defence.....	363
Industry.....	218	Common Conversion Factors	
Trade	239	from SI Metric to Canadian	
Finance	263	Imperial Units.....	365
Transportation	280	Acknowledgements	366
		Index	372

the environment

Canadians like to boast that Canada is the second largest country in the world, with an area of almost 10 million square kilometres. With this in mind, we tend to assume that Canada will never have problems of crowding. Unfortunately, relatively little of that area is easily habitable for those living average southern Canadian lifestyles, and only about 7 per cent of the land is presently economically viable for farming. Recent years have seen increased concern about how we use or abuse this environment and how we can better adapt to our demanding climate while making much more efficient use of finite resources.

Canada's rapid population growth has been concentrated mainly in cities. Growing cities increasingly threaten surrounding agricultural lands with demands for more land for housing, transportation systems, etc.—a trend especially obvious in the Windsor-Quebec City corridor and the lower BC mainland. Since Canadian cities tend to develop where climate and landscape are gentlest, the land they and their spreading suburbs use tends also to be the most productive farm land; at the same time population growth, both locally and world-wide, demands increasing food production. In the light of this demand the loss of any good agricultural land becomes a very high price to pay for continuing urbanization and industrialization.

As population has grown, so has dependency on the goods and services provided by more and more large-scale technology. Non-renewable resources are consumed at an accelerated rate, both as raw materials and as energy to keep the machinery of transport and production going. While concern about continued supply of these resources rises, growing quantities of solid wastes accumulate and pollution threatens the air, land and water that support all life. One result of such overuse and abuse of the environment is a growing scarcity of resources and resulting higher costs for food, energy, housing and other human needs. Another is the fear that the quality of life must deteriorate under such pressures.

In the past the availability of unexploited agricultural land, of readily accessible renewable and non-renewable resources and of cheap and abundant energy has allowed Canadians to avoid the problem of finite resources. When the resource on which a community's economy was based was used up, there seemed to be plenty of unexploited resources elsewhere to move on to. At a time when people were few and far between, most of the pollution they generated could be tolerated by the natural environment. Some communities did suffer severely from changes in the resource base; trappers, the native peoples, farmers, miners, fishermen and lumberjacks all faced drastic changes when the resources on which they had built their lives were depleted. But the country as a whole still seemed to offer unlimited new resources.

The Canadian economy and society were founded upon cheap, abundant resources and limitless horizons. However, the realities that must now govern policies, lifestyles and designs are finite and increasingly expensive resources and social and environmental conditions that can no longer tolerate abuses.

The Canadian climate has to be given much more consideration by policy makers, resource managers, planners and designers. Our long non-growing season, the distribution of water resources and such specific problems as permafrost in the North all limit food production and mean that renewable resources take longer to renew, wastes take longer to decay and flora and fauna are under greater stresses than in milder climates. Alternating extremes of hot and cold temperatures create special design and medical problems. Common building materials like steel and plastics don't stand up well. Existing Canadian buildings were constructed on the basis of cheap energy or mild-climate designs; they need renovation to conserve energy and save on heating and cooling costs, while efforts continue to develop designs for new structures and arrangements of buildings that will suit the climatic extremes prevailing in most of the country. People too are stressed both physically and emotionally by extreme temperatures, especially by the combination of cold and increasing periods of darkness in winter.

The use of Canada's 10 million square kilometres is also limited by physiography and the general environment. Permafrost, ice, muskeg, slope and unstable soils produce particular problems for constructing and maintaining buildings and transportation systems. Lack of suitable soils, or soils that require expensive drainage and fertilization, limits agriculture and forestry. Shortages of rock (gravel) in other areas make construction difficult and expensive. Much of British Columbia is just too high and/or too steep for development.

The very large distances between settlements throughout most of Canada introduce problems of heavy energy consumption for transportation, high costs of



Mary-Anne Falls, NS.

transportation systems as a result of both distances and difficulties of construction and the cultural and psychological effects of isolation. The costs associated with these problems are borne by all Canadians, as government and industry subsidize development so that it might some day become profitable.

Biting insects in the North are both a source of food in one part of the ecological web and a check on mammal populations on the other because their large numbers can fatally weaken the sick, infirm and very young; if man were to use insecticides to make areas comfortably habitable for him and his livestock the insecticides and the absence of the insects would both have serious repercussions.

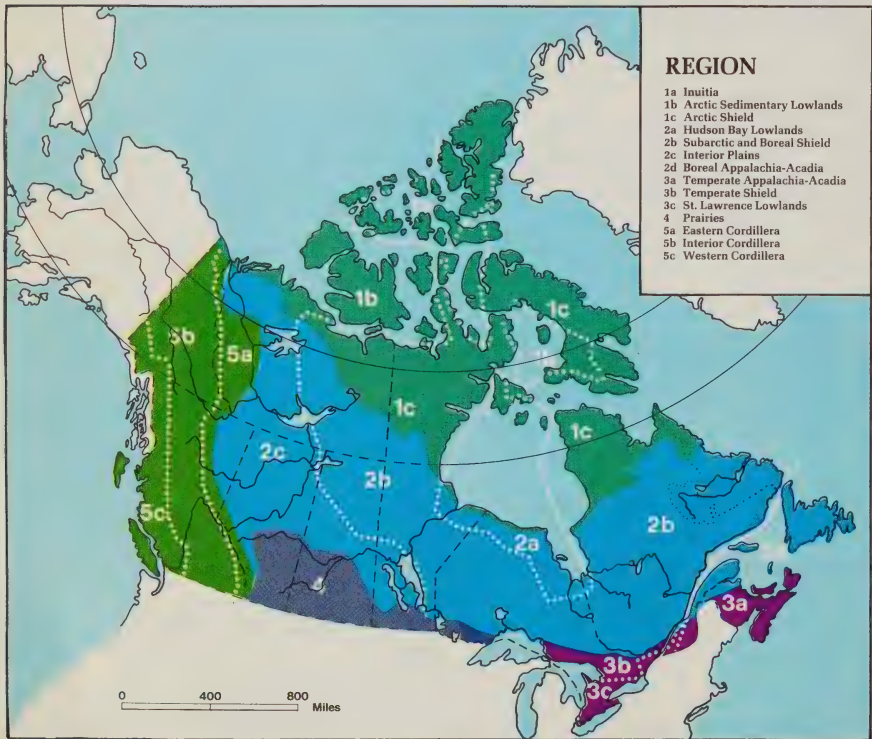
The alternative to stumbling into a future dominated by forces beyond our control, such as climate, resource-base changes or the changing policies of other nations that now fill the gaps in Canadian production, is to consciously and conscientiously redesign our physical systems and social institutions and adapt our lifestyles to the physical realities. Canadians can develop a society that strikes a better balance between what we demand of our resources and environment and what nature is able to provide over the long term, and we can do it without drastic changes in our way of life.

The following descriptions of Canada's climate and physiography provide an introduction to the necessary self-knowledge.

The Land

Canada's borders encompass 9 977 000 km² (square kilometres), yet the country's overall pattern of relief is simple. The interior is a plain-like surface bounded on the east, west and north by a highland rim but open to our American neighbours to the south. This low-relief area is 3 200 km (kilometres) wide at its widest in the south and narrows to about 1 600 km in the north. On the western side the Cordilleran region is an almost unbroken mountain chain extending from the American border to the Beaufort Sea. On the eastern side, the Appalachian Mountain system forms the Atlantic provinces. On the northern side, the Torngat Mountains of Labrador and the Baffin, Axel Heiberg and Ellesmere Island mountains form a more broken barrier.

In any analysis of Canada's physical geography the fact that up to 97 per cent of its surface has been repeatedly covered by glacier ice within the last million years is of fundamental importance, in that the surface features of both mountains and plains have been extensively modified. Only the central part of the Yukon Territory and minor parts of the Northwest Territories escaped glaciation. About 2 per cent of Canada is still covered by glacier ice, but its distribution is so restricted that





The confluence of the Ross and Pelly rivers in the Yukon Territory.

probably two thirds of the Inuit (Eskimo) population, for example, have never seen a glacier. About 155 000 km² of ice remain in the Arctic islands and 52 000 km² remain on the mainland.

Four major vegetation zones and five major landform regions of Canada are used as a basis for the discussion that follows. In general, the vegetation zones provide a convenient basis for regional description; only in the case of the Cordilleran region are landforms considered more useful for this purpose. Accordingly, the regions are described under the five major headings of: 1. The Arctic Tundra; 2. The Subarctic Parkland and Boreal Forest; 3. The Eastern Temperate Forest; 4. The Prairies; and 5. The Cordillera. An attempt has also been made to identify the distinctive natural hazards associated with each of these regions, where natural hazard is defined as "an interaction of people and nature governed by the co-existent state of adjustment in the human use system and the state of nature in the natural events system. Extreme events which exceed the normal capacity of the human system to reflect, absorb or buffer them are inherent in hazard".¹

¹G.F. White, *Natural Hazards* (Oxford University Press, 1974), p 4.

1. The Arctic Tundra Region

The Arctic Tundra corresponds closely to the region that lies north of the southern limit of continuous permafrost. Permafrost is the thermal condition in earth materials that remain below 0°C for two years or more. Approximately 26 per cent of the world's land surface is underlain by permafrost, and distinctive landforms and engineering problems are associated with its occurrence. The tundra vegetation that is characteristic of this region shows considerable variety, and is discussed under each sub-region.

This region has generally been regarded as comparatively free from natural hazards. Nevertheless, a number of potential environmental problems can be identified, such as building and highway construction, sewage disposal, water supply and hot-oil pipelines. In each case the problem results from a disturbance of surface conditions, whereby there is an increase in summer thawing and a consequent thickening of the active layer. Insulation of the ground surface needs to be maintained by not removing the vegetation mat or by adding coarse gravel fill.

(a) Inuitian Sub-region (378 000 km²)

This is the northernmost part of Canada, north of Parry Channel (74°N). Included are Ellesmere, Axel Heiberg, Parry and Queen Elizabeth islands. One third of Ellesmere and Axel Heiberg are covered with ice (about 96 000 km²) and this includes 12 ice caps, each with an area of more than 2 500 km². Local relief up to 1 200 m (metres), with the highest summits around 2 500 m, provides the setting for some of the harshest environments on earth. In this high Arctic polar desert, vegetation may be completely absent except for crustaceous lichens. "In its variety, its aridity and its glaciers, and above all its potential for petroleum development, it is perhaps the most fascinating of all the regions of northern Canada."²

(b) Arctic Sedimentary Lowlands Sub-region (409 000 km²)

Included in this category are: most of the Arctic islands south of Parry Channel, such as Banks, Victoria, Prince of Wales, Somerset and Southampton islands; low-lying parts of Devon, Ellesmere and Baffin islands; and the Arctic Coastal Plain, including the Mackenzie River Delta. They form low coastal plains and plateaus underlain by horizontally bedded sedimentary strata covered by a variable depth of drift sediments or, in the Mackenzie Delta, of fluvial sediments. Although underlain by continuous permafrost, the land surface shows a markedly richer tundra vegetation than the Inuitian sub-region. Lichen moss tundra, including reindeer moss in the drier sites and wet tundra with grasses and sedges, provides an almost continuous vegetation cover. The Mackenzie Delta has exceptionally rich vegetation, including stands of white and black spruce on the higher parts of stable river island bars. Rock deserts and peat-covered tundra plains are also present and are especially well developed on Southampton, Coats and Mansel islands in Hudson Bay.

Of particular interest in this sub-region are the distinctive landforms that have developed under the influence of periglacial processes. Spectacular conical hills

²J.B. Bird in W.C. Wonders, *The North* (Toronto, 1972), p 24.



The coastline of Ellesmere Island, NWT.

called pingos develop in drained lake bottoms along the Arctic Coastal Plain; polygon-patterned ground is common; mounds, hollows and mud circles are widespread; and solifluction terraces—resulting from the saturation of the soils and frost action—are here classically developed. All this occurs over a depth of permafrost that reaches 400 m in the delta and 490 m on the islands.

(c) Arctic Shield Sub-region (1 412 000 km²)

Included in this part of the Arctic Tundra are 20 per cent of the Mackenzie District, 80 per cent of the Keewatin District, 35 per cent of the Franklin District (including most of Baffin Island)—all in the Northwest Territories—and 15 per cent of Quebec. At least two rather distinct landscapes are evident. There is the spectacular eastern highland rim, which includes the southeastern corner of Ellesmere Island, the eastern end of Devon Island, Bylot Island, eastern Baffin Island and the Torngat Mountains of Quebec, with local relief in the Baffin fiords as high as 1 830 m; some of the most remarkable glaciated erosional topography of the North American continent is found on Baffin Island's east coast. The remainder of the sub-region is commonly known as Canada's Barren Grounds and is characterized by uplands, hills and rocky lowlands.

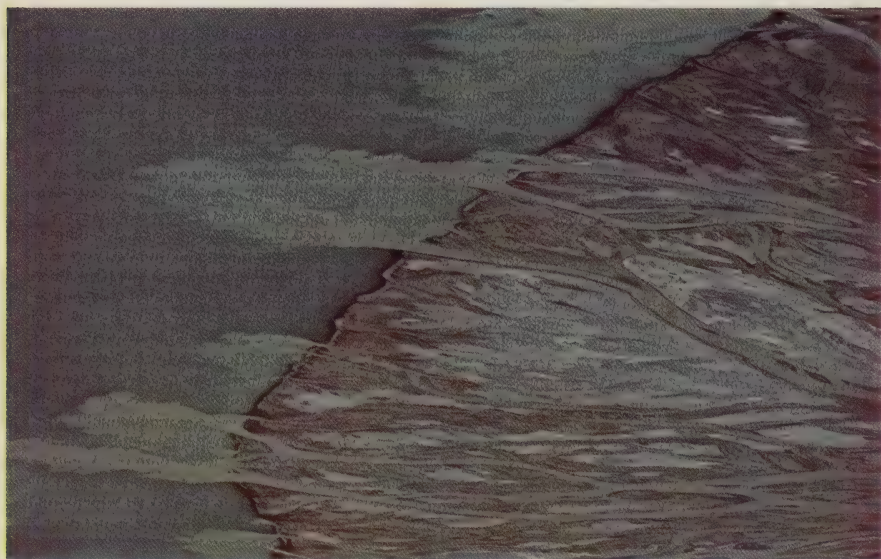
The most luxuriant tundra vegetation is known as bush tundra, with willow and alder bushes and dense undergrowth; it occurs locally in the Barren Grounds, especially on the south side of Amundsen and Coronation gulfs. Wet tundra is more common in the eastern part of the sub-region, where the environment is generally more humid; cliffs and talus slopes, gravel outwash plains, coastal sedge and grass marshes, and permanent ice caps give variety to the landscape. While the western shield has weeks of warm, dry, cloudless weather in summer, the eastern rim may have long periods of cold, cloudy, damp weather. In spite of this poor climate the fiord lands of Baffin Island support the widest variety of arctic ecosystems.

2. The Subarctic Parkland and Boreal Forest Region

This is a region underlain by discontinuous permafrost in the north and totally free of permafrost in the south. It cuts a swath through Mackenzie District, western Keewatin District, northeastern British Columbia, northern Alberta and Saskatchewan, and almost the whole of Manitoba, Ontario, Quebec and Newfoundland. The distinctive zones of vegetation that give character to this region are discussed under the Shield sub-region.

Here, as in the Arctic Tundra Region, natural hazards have not been generally recognized or adequately investigated. Perhaps the most severe hazard faced by agents of economic development in this region is the vast expanse of muskeg that is

Water melted from the glaciers flowing into Peyto Lake in Banff National Park, Alta.





Sunset in northern Manitoba.

characteristic of the surface cover. "Movement by foot in summer is exhausting and often impossible, as one sinks into the saturated moss and peat."³

(a) Hudson Bay Lowland Sub-region (303 000 km²)

Although continuous permafrost is present in the narrow strip along the Hudson Bay coast where the mean annual air temperature is less than -4°C , the significant difference characterizing this sub-region is that some areas of it do not have permafrost. In the southernmost part of the lowland there is no permafrost at all; at the southern fringe of the discontinuous permafrost zone ($53\frac{1}{2}^{\circ}\text{N}$ is the southernmost occurrence of permafrost in Canada outside the Cordillera), permafrost islands vary from less than 15 m^2 to several hectares in extent and a few centimetres to 60 cm (centimetres) in depth. At Churchill the permafrost is continuous and 60 m deep.

Physiographic uniformity derives from horizontally bedded sedimentary strata covered by a varying depth of drift, but this sub-region contrasts with the surrounding Shield sub-region most markedly in the nearly universal presence of organic terrain and the absence of bedrock outcrops.

Tamarack and scattered-to-dense spruce stands, ranging in height from less than one metre to more than 12 m, are dominant. Alder and willow form the undergrowth. Sphagnum, feather and other mosses, Labrador tea, grass and marsh sedge form the ground vegetation.

Microrelief of hummocks, peat plateaus and palsas up to 6 m in height is characteristic. It is estimated that peat is accumulating at a rate of 2.5 cm every 20 years.

³J.B. Bird, *The Natural Landscapes of Canada*. (John Wiley, 1972), p 165.

(b) Subarctic and Boreal Shield Sub-region (3 354 000 km²)

Covering 40 per cent of Mackenzie, 10 per cent of Keewatin, 35 per cent of Saskatchewan, 60 per cent of Manitoba, 80 per cent of Quebec and 55 per cent of Ontario, this represents the largest single sub-region described. The Precambrian bedrock of the Shield gives subdued relief, and extensive drift areas are preserved. Fluvioglacial deposits in the form of eskers are particularly well expressed in the Keewatin and eastern Mackenzie districts. Another noteworthy feature is the recentness of the massive post-glacial uplift of land; for example, on the east side of Hudson Bay post-glacial marine features are found as high as 270 m above the present sea level.

Three major vegetation associations occur in this sub-region: the forest tundra, the northern woodland and the closed boreal forest (or Canadian forest). The major part of the sub-region is underlain by discontinuous permafrost.

The forest tundra zone varies from 48 km wide in Mackenzie District to 160 km wide in Keewatin District and Quebec. Islands or strips of white or black spruce or (in Quebec) larch are restricted to sheltered areas but become progressively more dominant southwards.

The northern woodland zone has the appearance of an open parkland and is best developed in Quebec, where widely separate candelabra spruce stand on a deep lichen floor. Along the banks of the major rivers and in sheltered areas, full boreal forest is developed.

The boreal forest of spruce, fir, larch, hemlock and pine extends across the whole of Canada from Newfoundland to British Columbia. The eastern half of this zone has a smaller number of species than the western half, but there is remarkable similarity in overall structure.

The clay belts of the Shield (especially the great clay belt of Ontario) stand out because of the general absence of rock outcrop and because agricultural development is leading to extensive modification of the boreal forest.

(c) Interior Plains Sub-region (1 479 000 km²)

This sub-region covers 25 per cent of Mackenzie, 10 per cent of British Columbia, 80 per cent of Alberta, 30 per cent of Saskatchewan and 30 per cent of Manitoba. With the same three major vegetation associations as the Shield immediately to the east, it differs from the Shield mainly in its physiography. Major hills, plateaus and escarpments are formed by outcrops of gently dipping sedimentary rocks (limestone, sandstone and shale), which contrast with the Precambrian rocks of the Shield. On the other hand the details of the landscape are a product of glaciation, and particularly extensive areas are occupied by meltwater channels from proglacial lakes and by extensive lake-bed materials. The sub-region is about 960 km wide in the south. It narrows to 320 km wide east of the Franklin Mountains, and widens to 800 km again in western Mackenzie District. The scenery consists of wide vistas of undulating plains, the occasional valley cut deep below the general surface and the distant lines of hills and escarpment.

There are no mountain barriers to provide protection from cold air moving south from the Arctic or from warm air from the Gulf of Mexico. Consequently the widest

variation of temperature between summer and winter tends to occur and day-to-day changes are frequent. Those areas within 160 km or so of the Rocky Mountain foothills experience Chinook winds that can raise temperatures from -29° to $+2^{\circ}\text{C}$ in a few hours.

(d) Boreal Appalachian-Acadian Sub-region (155 000 km²)

This area includes Newfoundland and the Gaspé Peninsula of Quebec. It is moderately rugged country reaching its highest elevation of over 1 200 m in the Shickshock Mountains of the Gaspé. Newfoundland has an extremely varied physiography and as a result there are considerable limitations to agriculture. About 50 per cent of the province is classified as bedrock outcrop, some thinly mantled with stony till; 25 per cent is classified as ground moraine; 10 per cent is end moraine; 10 per cent is organic terrain or sphagnum peat in morainic depressions; the remaining 5 per cent is glaciofluvial, marine sediment and recent alluvium, which has some agricultural potential.

Autumn colours in Quebec.





Infra-red images taken by satellites and transmitted to the Canada Centre for Remote Sensing aid scientists in their study of the land. In this image Lake Ontario, Lake Erie and the Niagara River are dark blue; forests and farmlands are varying shades of red; and the built-up areas around Toronto and Hamilton, Ont., and Buffalo, NY, are bluish-green.

3. The Eastern Temperate Forest Region

The eastern temperate forest includes a deciduous forest zone in southwestern Ontario, a Great Lakes-St. Lawrence forest zone north and northeast of the deciduous forest and an Acadian forest zone characteristic of the Maritime provinces. Although there are conifers in this region, deciduous trees are progressively more important toward the southwest.

The most widely recognized natural hazard in this region is that of earthflows associated with a marine clay that was deposited in the post-glacial Champlain Sea. In the St. Lawrence and Saguenay Lowlands of Quebec this clay is found in a relatively densely settled agricultural area; on May 4, 1971, 40 houses were destroyed and 31 people killed by an earthflow at St. Jean Vianney, Quebec. Over 700 earthflow locations have been mapped in this region.

There is also an area of major earthquake activity in the St. Lawrence Valley, but because historically there have been few damaging events there is a low level of public awareness of the hazard. In September 1944, at Cornwall, Ontario, an estimated million dollars' worth of damage occurred from earthquake activity, but there was no loss of life.



Waves beating against the snow-capped rocks of Peggy's Cove, NS.

(a) Temperate Appalachian-Acadian Sub-region (210 000 km²)

This area includes New Brunswick, Nova Scotia, Prince Edward Island and the Eastern Townships of Quebec. The uplands are arranged in two linear belts—one across southern New Brunswick and northern Nova Scotia and the other over peninsular Nova Scotia and Cape Breton Island. Further west, the Eastern Townships are located on the Eastern Quebec uplands, a southwesterly extension of the Notre Dame Mountains. The Acadian forest zone is most typical here. Red spruce, balsam fir, yellow birch, sugar maple and beech are common. Also present is the Great Lakes-St. Lawrence forest with red and white pine, eastern hemlock, yellow birch, sugar maple, red oak, basswood and white elm.

(b) Temperate Shield Sub-region (161 000 km²)

Fifteen per cent of Ontario, between Sault Ste Marie and Ottawa, including Sudbury, North Bay and Algonquin Park, is dominated by sugar maple, aspen, yellow birch, hemlock and red and white pine (Great Lakes-St. Lawrence forest). This Shield area, with its protruding rock knobs and intervening pockets of sand, silt and clay, is primarily a forested area. With its varying combination of trees, lakes, rivers, hills and animal life, located conveniently close to the major urban centres of Canada and the northeastern United States, it is a favourite recreational area.

(c) St. Lawrence Lowlands Sub-region (181 000 km²)

Ten per cent of Ontario and 5 per cent of Quebec are included in this small sub-region. It contains Canada's two largest cities, Toronto and Montreal, and its St. Lawrence Seaway connects the heart of Canada to the Atlantic Ocean. Located between the Appalachians and the Shield, these lowlands are formed of very gently dipping Palaeozoic sedimentary rocks. West of the Thousand Islands they are 240 km wide; to the east they are never more than 125 km wide. Most of the land is undulating and less than 150 m above sea level, but in the Bruce Peninsula above the Niagara Escarpment the plain reaches 550 m. In detail, the lowland has a varied terrain that has been investigated more comprehensively than any other landform region of Canada. Glacial depositional features predominate. Till plains are extensive and there are recurring end moraines, drumlins, clay plains and sand plains. Beech-maple forest is the dominant vegetation, with admixtures of white oak, hickory, walnut, basswood and black cherry. In terms of heat and sunshine or growing days a year the southwestern corner is by far the most favourable area for agriculture in Canada; the presence of deciduous forest is evidence of that preferred environment. The influence of the Great Lakes reduces the range in temperature from winter to summer by as much as 9°C compared with parts of Minnesota in equivalent latitudes.

4. The Prairie Region (337 000 km²)

Ten per cent of Alberta, 35 per cent of Saskatchewan and 5 per cent of Manitoba form a southern extension of the Interior Lowlands, discussed earlier. The distinctiveness of this region lies in the absence of forest vegetation in the so-called Canadian Grassland and the associated aspen parkland immediately to the north. Most of the primeval grassland (needlegrass, gramagrass, wheat grass, dropseed and fescue) has been ploughed.

Tall, short and mixed grass prairie form the core of the region. The tall grass prairie, typical of the Lake Agassiz plain west of Red River, Manitoba, is the result of an abundant supply of moisture. The short grass prairie (notably blue grama, June, wheat and spear grasses) has a moisture deficit of from 200 to 300 mm (millimetres), but there are many complex associations relating to particular drainage, soil and topographic conditions. The mixed grass prairie has a denser, taller and more diverse cover; it is transitional between both long and short grass prairie and parkland.

The parkland areas are a mixture of grassland and woodland cover. Aspen poplar predominates in most parkland groves, but bur oak and other Great Lakes Forest species are present in Manitoba and various mountain and subalpine species occur in the Rocky Mountain Foothills.

Hummocky moraine, end moraine, ground moraine and lake beds are the major landform features. Some semi-arid areas occur in southern Alberta and southwestern Saskatchewan. A number of badland areas have developed in Alberta where spectacular surface erosion has occurred.

The major natural hazards in this region are climatically induced floods and droughts. The Red River flood of 1950 and many subsequent lesser floods have been



Wildflowers cover the scar of the Frank Slide in Alberta.

well documented, as have the droughts of the 1930s and 1950s. A feature of these natural hazards is that, although loss of life tends to be small, economic costs are continuing to increase in spite of extensive flood protection works.

5. The Cordilleran Region

The Cordilleran region is part of one of the major mountain systems of the world. In it, five of the eight major forest zones of Canada—the boreal, subalpine, montane, coast and Columbia forest zones—and the Alpine tundra zone are represented. The boreal forest zone has already been described and is well developed in the Cordillera in northern British Columbia, southern Yukon Territory and southern Mackenzie District. The subalpine forest is a coniferous forest found on the higher slopes of the mountains east of the Coast Mountains; typical species are Engelmann spruce, alpine fir and lodgepole pine. The montane forest, with Ponderosa pine, Douglas fir, lodgepole pine, aspen (in the north) and sagebrush (in the southern valleys), is extensive in the interior plateau of British Columbia and a small area on the east side of the Rockies. The Columbia forest is characteristic of the southeastern part of the interior system of British Columbia, with western red cedar and western hemlock the typical trees. Finally, the coast forest on the west-facing slopes of the Coast Mountains and the western islands is the finest forest in Canada; towering stands of western red cedar, western hemlock, Douglas fir (south) and Sitka spruce (north) are extensively exploited commercially.

The Cordillera experiences the greatest variety of natural hazards of any region in Canada. Snow avalanche hazard is high in such areas as the Rogers Pass area in the Selkirk Mountains of British Columbia; earth slide hazard is illustrated by the 1903 Frank Slide in Alberta, where 70 people were killed; earthquake hazard is important, as the Yukon Territory and coastal British Columbia are in a major earthquake

activity zone; tsunami (or tidal wave) hazard is high on the west coast of Vancouver Island; and flood hazard in the Lower Fraser Valley has been well documented. Even drought hazard in the Interior Sub-region of the Cordillera should be considered. Nevertheless, the level of awareness of natural hazards, even in the heavily populated Fraser Valley, is remarkably low.⁴

(a) Eastern Sub-region (458 000 km²)

This area is 60 per cent rugged mountains (Mackenzie, Richardson and Rocky mountains), 30 per cent plateaus and foothills (Porcupine and Liard plateaus and Rocky Mountain Foothills) and 10 per cent plains (Old Crow, Eagle and Mackenzie plains). The highest peak is Mt. Robson, at 3 954 m. One of the most characteristic features of this landscape is impressive cliffs carved by glaciation from near-horizontally bedded sedimentary strata. The Rockies are seldom more than 100 km wide, but together with the Mackenzie and Richardson mountains they form an almost continuous series of ranges from the 49th parallel to the Arctic.

A complex succession of vegetation zones occurs with elevation. Above the boreal forest is a sub-alpine parkland and above this is a dense scrub where stunted spruces and pines are common. Beyond this timberline, alpine tundra, moss campion, saxifrage, sandworts, sedges and bilberries are common. Summer days are warmer than in the Arctic, soils are deeper and vegetation is lusher than its Arctic equivalent.

(b) Interior Sub-region (821 000 km²)

Approximately 55 per cent of this sub-region is plateaus (Interior, Stikine, Hyland and Yukon), 40 per cent true mountains (British, Ogilvie, Selwyn, Cassiar, Omineca, Skeena, Hazelton and Columbia) and 5 per cent lowlands (Rocky Mountain, Tintina and Shakhwak trenches). This extremely complex region is characterized by lesser local relief and a drier climate than the surrounding mountains. A considerable number of the peaks of the Columbia Mountains exceed 3 000 m. The interior plateau ranges from 600 to 1 500 m in elevation, with local relief from 90 to 150 m and deeply entrenched valleys to 900 m deep. The plateau is narrowest and highest in the south, where it narrows to less than 48 km between the Cascade and Monashee mountains. It broadens to 320 km in the Nechako-Prince George area; here the plateau is lower, the valleys are less deeply incised and low hills form the scenery. There is also a change in vegetation from the mixed forests in the north to the mountain woodland, grassland and arid sagebrush country to the south.

(c) Western Sub-region (313 000 km²)

The Western System is formed of massive plutonic rock bodies or, less commonly, by volcanic and folded sedimentary strata intruded by scattered plutons, all of which have produced high-relief, high-altitude terrain. Plutons are masses of coarse-grained igneous rock, such as granite.

⁴W.D.F. Sewell, *Water Management and Floods in the Fraser River Basin* (University of Chicago, Department of Geography, Research Paper 100, 1964).



Alpine meadows in Mount Robson Provincial Park, BC.

Longitudinally, the system is divided into three: the Coast Mountains of the mainland; the outer mountains forming the Queen Charlotte and Vancouver islands and the St. Elias Mountains; and, between the three, a series of lowlands. The Coast Mountains and the St. Elias Mountains contain the bulk of the 52 000 km² of glacier ice on the Canadian mainland. Mt. Waddington, over 3 900 m high, is the highest peak in the Coast Mountains and Mt. Logan, at 6 050 m, is the highest in the St. Elias Mountains. Along the coast for nearly 2 400 km between Vancouver and Alaska there are major fiords.

The treeline declines from 1 800 m on Vancouver Island to 900 m in the northern Coast Mountains. Over the same distance the level of glacier snouts declines from 2 400 m to sea level. This means that in the northern Coast Mountains, glaciers and forests are juxtaposed. The heavy snow accumulation is perhaps the most distinctive hydrologic feature of this sub-region.



1.



2.

3.
4.



1. Botanical Gardens, Hamilton, Ont.
2. Butchart Gardens, Victoria, BC.
3. Bloedel Conservatory, Queen Elizabeth Park, Vancouver, BC.
4. Allen Gardens, Toronto, Ont.

The Climate

Canadians have tended to accept their climate fatalistically. However, the desire to remain both a consumer society and a custodian of ecological values poses a need for skill, efficiency and prudence in using and living with climate. Sustained economic development is essential to providing an increasing population with desired consumer goods and this demands greater efficiencies and effectiveness in the use of our limited resources. On the other hand, the desire for a sustained high environmental quality demands that commerce, industry and social practices be within the restraints imposed by our climatically controlled ecosystem. Failure to do so now for the sake of short-term benefits may require very costly corrective measures in the future, or create irremediable problems.

Climate and the Economy

Climate is both a resource and a liability. As a resource, it provides the heat and moisture that are essential for life; it is a basis for agriculture, it provides warm lakes for swimmers and snow for skiing and it drives ocean currents. Drought, floods and hurricanes are among its hazards; these destroy life, damage property and inconvenience people, often stopping all normal economic activity within a community. Climatic change can drastically alter a regional economy by altering the ecosystems that are fundamental to its way of life.

Economic activity serves social goals and must usually be considered in the light of social desires and needs. Conversely, the need and desire to maintain unique landscapes, to reduce travel time between functional areas or to reduce the cost of public services are basically social, but they have great economic implications. Accordingly, many environmental and social issues are referred to in this article because, like climate, they too shape the Canadian economy and must be considered in the evaluation and use of climatic resources.

Climate as a Resource

It has been pointed out that "in general the centre of active progress in civilization has migrated from relatively unstimulating warm regions with few storms, where the winter is the most comfortable season, to stimulating regions with many storms, where the summer is the most comfortable period".¹ This has been made possible by the development of housing and buildings that provide a suitable indoor climate, and transportation systems that withstand the rigours of temperate-zone winters. That our climate is economically stimulating is attested to by our gross national product compared to those of low-energy-consumption countries of the tropics.

But our weather is much more than stimulating; our heat and cold, rain, snow and wind are exploitable resources. Definition of the nature of climatic resources has been a major occupation over the past century—in the planning of land use (particularly for agriculture), in the development of water supplies and in the

¹Ellsworth Huntington, *Mainsprings of Civilization* (John Wiley and Sons, Inc., New York, 1945).



The corner of a chinook arch above Bragg Creek, Alta.

development of drainage and irrigation systems, etc. The trend to optimal productivity through fuller exploitation of climatic energy, light and moisture sources is increasing as natural resource supplies become more stringent.

Renewable resources are the basis of much of Canada's industry; they provide the necessities of life—food, drink and shelter—and earn about one half of our export dollars. These resources depend primarily on climate. Resource management and use must therefore be based on climatological knowledge and the use of weather forecasts for optimal productivity.

The extraction and use of other resources are also highly climate-dependent. A major use of oil and gas, for example, is to offset cold, snow and heat. Climate-dependent ice fields and weather control the economics of arctic development. Much of our industrial energy is generated from climate-dependent water resources and water is used extensively in processing—for example, up to 22 m^3 (cubic metres) to refine one cubic metre of petroleum and $3\,000 \text{ m}^3$ to make one tonne (metric tonne) of synthetic rubber.

On the other hand, the impact of industry, cities and people on the atmospheric environment places an upper limit to certain types of economic endeavour. Economic activity must therefore be tailored in the light of an understanding of the environment, man's influence thereon and the capacity of the atmosphere to safely disperse industrial effluents. The interactions of weather, ecology and economy demand understanding.

Climate as a Liability

Climatic hazards stand out in our memory because of their great impact on society and their resulting newsworthiness. Canada, like most countries in temperate and

polar regions, has a fluctuating climate that has caused crises from the times of early settlement.

Direct economic losses caused by some of the more notable weather events in Canada are noted in Table 1. Included in the list are events that are recognized historically as major disasters, but for which there was no available estimate of the direct economic effect.

Table 1. Selected weather events, and some losses directly caused by them, 1868-1973

Year	Event	Estimated losses	
		Life	\$'000,000
1868	Drought at the Red River Settlement		
1860s	Storms on the Great Lakes		
1885-96	Drought on the Prairies		
1912	Tornado at Regina, Sask.	30	4
1917-21	Drought on the Prairies		
1930-36	Drought on the Prairies		
1935	Snow-storm at Vancouver, BC		
1944	Tornado at Kamsack, Sask.	(2,000 homeless)	2
1945	Low temperatures in Nova Scotia		4
1949	Drought in Ontario		100
1950	Red River flood		100
1953	Tornado at Sarnia, Ont.		5
1954	Hurricane Hazel, Ontario	100	252
1954	Wheat rust on the Prairies		33
1955	Drought in Ontario		85
1957	Hail storm in Saskatchewan		17
1959	Wet weather in Saskatchewan (harvest lost)		12.5
1959	Snow-storm in Ontario		
1967	Snow-storm in Alberta		10
1969	Glaze storm near Quebec City, Que.		30
1967-68	Forest fires — all of Canada		100
1973	Drought in British Columbia		
1973	Glaze storm at Sept-Îles, Que.		10

Losses due to storms are rarely easy to express. The dollar value of cattle lost in a snowstorm may be easy to define within certain limits, but it is difficult to place a dollar value on the weakened state of the remaining herd. The \$2.2 million loss in the Quebec City ice storm of 1973 does not disclose the fact that 250,000 people were deprived of electricity, heat and drinking water, that quantities of food were spoiled as freezers stopped operating, or that fire protection facilities were impotent during a period when fire hazard was greatly increased by the use of camp stoves and other makeshift equipment.

Defending Against Loss. People have five, not necessarily mutually exclusive, ways of facing up to weather, namely: "1. passive acceptance; 2. avoidance of areas and actions unfavourable to effective use of resource conditions; 3. current



Snow clearance, Ottawa, Ont.

operational and defensive actions based on assessment of meteorological information; 4. modification and direct control of the weather/climate; and 5. structural and mechanical defenses—i.e. capitalizing on climatological knowledge.”² We do not need to take our losses passively; there are alternatives, one of which is insurance.

Typical of our defensive actions are salting programs for highways, switching from carbon to steel trolleys by transit systems, operation of frost protection devices and evacuation of areas likely to be flooded. These actions are frequently based on weather forecasts, and their basis is climatology. For example, the design of a dam and the operational program for a reservoir are based on long-term climatological and related information, which assures the operator that the stored waters will serve all reasonable demands during the lifetime of the reservoir, including periods of drought, and will also withstand floods and minimize their effects downstream. Weather forecasts are necessary in the operational phase to ensure that the system functions safely and in the best interests of the public.

The Atmospheric Environment Service of Fisheries and Environment Canada has responded with foresight to changing and increasing societal demand. Its service horizon has been broadened and adapted to meet special needs, both national and regional. New technology has been exploited to improve services and achieve greater efficiency. This has enabled meteorologists to apply their science in the resolution of important socio-economic issues in which weather is a factor.

²J.R. Hibbs, “Evaluation of weather and climate by socio-economic sensitivity indices,” *Human Dimensions of Weather Modification* (University of Chicago, Department of Geography, Research Paper No. 105, 1966).

The Applications of Climatology

Agriculture and Forestry

Agriculture and forestry are among those activities that are highly exposed and sensitive to weather. Weather forecasts and planning information are therefore essential in combatting the recognized major hazards, such as drought, frost, hail, excessive rainfall, flood, wind, snow and winterkill, as well as climatically influenced diseases, epidemics and insect infestations. Forest fire losses average about \$23 million per annum, and have been as high as \$83 million in one year. Recent major crop losses, based on federal assistance payments, are identified in Table 2; they provide an indication of the potential economic benefits of accurate forecasts.

Table 2. Crop losses as identified by assistance payments

Year	Cause	Location	Estimated loss \$'000,000
1945	Low temperatures	Nova Scotia	4.0
1954	Wheat rust	Prairies	33.0
1959	Wet harvest	Prairies	12.5
1964-65	Wet weather	Quebec	1.5
1965	Drought	Eastern Canada	5.5

The production of rapeseed, a \$100 million business in 1971, illustrates again the importance of climate in the agricultural economy. Rapeseed crops thrive in the prairie climate of hot, sunny days and cool nights, and production is intensive in this area. To the south, the percentage of oil contained in the seed drops off so that it becomes uneconomic as far north as Minneapolis. Delineation of the area where the climate is suitable for such crops has obvious economic value.

The weather must be suitable not only for growing, but also for seeding, cultivating, spraying and harvesting operations. Both weather forecasts and climatological statistics have been used extensively by farmers in overcoming the problem of unfavourable weather (during haying, for example) or in assessing the chances of getting favourable drying weather as the harvest season advances toward winter.

Water Resources

Precipitation is the primary source of surface water supplies, and evaporation the major consumer. Planning, public and political conviction and economic decisions as to the viability of a hydrologic system are therefore frequently dependent on climatology. The magnitude and reliability of supplies is dictated by rainfall and snowfall characteristics. Design flood, irrigation need, urban demand, storm-sewer



Springtime in Alberta.

capacity and culvert size are all functions of climate and the operation of water control systems for flood control and conservation of water in times of drought is often highly dependent on forecasts.

Annual expenditures on water control and conveyance structures, designed in whole or in part on the basis of rainfall, snow melt and evaporation data or analysis, are probably about \$1 billion. Benefit-cost data for hydrometeorological studies in Canada are not readily obtainable, but it has been estimated, for example, that a one-per-cent improvement in the spring flow forecast to the Portage Mountain Reservoir will yield \$1 million a year in reduced operational costs.³

Use of water resources by towns, cities, industry and agriculture, as well as natural losses through evaporation, must be understood in terms of probability and seasonality to enable the design of supply systems that will serve all the reasonable requirements of a community. They are predictable, using meteorological forecasts and information directly and in relation to industrial, social and biological activities.

³J.P. Bruce, personal communication.

Resource Development

Development of Canada's resources in hinterland and frontier areas poses major environmental problems in which climatology must play a dominant role. For example, sulphur dioxide releases from refineries in the tar sands of Alberta could destroy vegetation over vast areas of land if improperly controlled; the capacity of the atmosphere to disperse this contaminant is therefore a major concern. Should coal come back into prominence, then the dispersal of sulphur dioxide and particulates could be a major problem. Gasification and cooling towers may release great amounts of thermal energy and moisture into the atmosphere. Safety and security from natural hazards are major factors to be considered in offshore drilling, pipelining (river crossings, for example), the transmission of electrical energy and the operation of nuclear generating stations.

Topoclimatology and air quality studies must play a significant role in the placement of refineries, conversion systems, infrastructures, etc. Marine climatology and weather forecasts are highly involved in problems of offshore drilling, shipping in ice-congested waters, oil storage at sea to allow for interruptions of shipments from drilling sites by fog, and the placement of facilities for deep-sea harbours.

Environmental concerns should force greater use of renewable energy resources, which in turn would require much improved interpretation and understanding of the space and time variations of solar energy and wind and of their by-products, such as waves, currents and thermal gradients.

Land Use Planning

Resource development, industrialization, the trend to urbanization, growing population, limited resources and moral responsibilities make necessary a rational approach to land use in Canada.

Intensified resource use and exploration are linked with affluence and a desire for urban life. Not only are Canadians leaving the farms for the towns, but they are abandoning the towns to concentrate in a few large industrialized urban centres. It is estimated that, by the year 2000, 20 million Canadians (60 per cent of our population) may live in 15 centres with populations over 300,000, 17 million of these in centres of about 1,000,000 or more population.

These trends are of major socio-economic importance, and among the problems created are formidable and complex land use problems. The potential roles climatology will play in dealing with them are equally numerous and complex. For example, about one half of Canada's Class I agricultural lands are in Ontario, where urbanization pressures are great. There, the climatic zonation of lands can aid the planner in the conservation of prime areas. Elsewhere, it can provide the farmer with a basis for greater security whenever and wherever the climate is marginal.

Construction

Construction is Canada's largest industry, grossing about \$18 billion in 1973. Highly exposed and weather-sensitive, it qualifies as a prime area for meteorological support. The use of meteorology in the engineering of structures has included



Tuktoyaktuk, NWT, at 10:30 on a July evening.

the problems of snow loads, wind loads, ice accretion, drainage, rain penetration and weathering of materials. At the same time, the prediction of construction weather—weather for setting concrete, for earthwork and for the operation of cranes—is of major importance to the industry.

Transportation

Aviation has grown exponentially. Airport capacities have in some cases been exceeded soon after their construction, and the noise created by modern aircraft is of increasing concern. To alleviate these growing problems, new airports have been developed in areas removed from the large cities. This has required the determination of locations that have the most favourable take-off and landing weather and whose runway orientations would not cause conflict with established traffic patterns.

Topography-climate relationships are the basis of arctic site selection and are therefore an important factor in northern resource development. Pipelines, ships and tractor trains are an important part of the arctic transportation scene. Their supporting infrastructure requires compressor stations, harbours and towns. In the past, shoreline and inland installations have been blown away or badly damaged by arctic winds; shelter is all-important. On the other hand, unventilated areas pose the hazard of air pollution and ice fog under conditions of persistent cold and airmass inversion. The study of air drainage and wind is, therefore, most important in the collocation of facilities and residential areas.

Tourism and Recreation

For most Canadians recreation is an outdoor activity, and weather dictates whether or not the outdoor experience is enjoyable. Recreation is highly oriented to



Gonzales Observatory in Victoria, BC, serves as the regional climatological data centre.

renewable natural resources and the state of the resources is climate-dependent. In some cases climate is the resource.

Tourist spending is of great significance to national, provincial and local economies, and governments have immediate interests in the development of parks, lodges and other recreation areas. A rational approach to development requires climatological inputs; even the Niagara Falls are unimpressive when they are enshrouded by fog. Methods of getting optimal recreational value on the basis of climate have been developed and climatic studies of national parks have been undertaken to provide a basis for the placing of facilities and roads and for the development of operational programs.

Environmental Impact Assessment

Environmental impact assessments are an essential defence against undesirable environmental effects of man's activities, both deliberate and inadvertant. In undertaking an assessment planners are forced to consider the side-effects of their proposals over the short, medium and long ranges, and also of possible alternatives, one of which is always not to proceed. A decision is ultimately reached to stop the program or approve the most acceptable alternative in actual or modified form. A surveillance program is also established to ensure desired conditions are met.

The quality of the air and the ability of the atmosphere to carry pollutants to areas where they can damage the environment or buildings, or be injurious to human health, are major concerns of an industrialized society. However, the climatological aspects of assessment do not reside only in air quality. They may start with the evaluation of the engineer's design—will a tower fail under ice and wind loads, for example? Changes in land use such as extending agricultural area, installing



Winter in the Rockies.

pipelines and creating new lakes may also alter climate. Such alterations are usually small in scale, but there is concern that the aggregated sum of a large number of inconsequential projects might be critical. Small changes in temperature, precipitation or fog might not significantly influence a region's climate, but perhaps these conditions could create new extremes that would place an intolerable stress on certain species; or perhaps they are involved in a non-obvious feedback mechanism that would have significant consequences. Broad, positive understanding of interdisciplinary relationships is extremely important in these matters.

There is a need to distinguish between what should be done and what can be done. The potential for applying meteorology in economic decisions is virtually infinite. Some applications have a high payoff, others a low payoff, while in still other cases the payoff may not be clearly definable because it is indirect. The high-return activities will usually have precedence, but not always; an application may be part of a greater integrated or comprehensive plan of which it is an essential component. The social issues that merit our response cannot be evaluated in economic terms, but they will presumably be self-evident, such as those now posed by famine in many areas of the world and by dwindling global food reserves.

the people and their heritage

History

Canada developed from colony to nation in the first half of the 20th century, achieving a position as a fully independent state within the British Commonwealth. But at the same time, our dependency on the United States became more critical and the difficult task of maintaining independence from a powerful neighbour more acute. Throughout our history, the twin themes of accommodation and co-operation among the racial elements making up the Canadian population and of defining Canada externally in a manner satisfactory to Canadians have affected every aspect of national life.

The territory that is now known as Canada began as a field of settlement in the 17th century. The French were first on the ground, reaching out for the interior of the continent through the St. Lawrence River system. But by the 1670s, the English were established on Hudson Bay and the struggle for control of the hinterland had begun. The French pressed north and west, the English south from Hudson Bay and west from their settlements along the Hudson River and in what is now New England. Aided by their Indian allies and abetted by the hostility between Britain



Historical re-enactment at Fort Erie, Ont.

and France in Europe, the competitors were fighting to control the resources of the continent, a struggle that Britain would finally win. Before that victory occurred, however, New France had established itself tenaciously along the St. Lawrence and in Acadia.

For its first fifty years of struggle, the French colony was tiny. Settlement proceeded slowly, the missionaries found few converts among the heathen and trade was scanty. By 1663 there were fewer than 2,500 habitants. Their major achievement was that they had survived.

Nonetheless out of that act of survival grew the myths that have shaped French Canada's still-strong consciousness of its past and of its differentness. There were the heroes, such as Dollard des Ormeaux and his tiny band of compatriots who died defending the colony against the Indians in 1660, and martyrs, such as the Jesuit priests who succumbed to torture while attempting to bring Christianity to the natives. The past was epic.

By the 1740s, world-wide French-English rivalry had brought on the war that would spell the end of New France. The colony had advanced since the mid-17th century, royal government having brought new settlers, trained civil servants and regiments to defend the settlements and their outposts. Nevertheless, against British seapower and the numerically superior forces that could be brought against it, New France was doomed. Quebec City, the major settlement, fell in 1759 to General Wolfe's army and the Treaty of Paris ceded France's major North American possessions to Britain in 1763. North America was now under British control.



Part of the Highland Village at Iona, NS.

Within 20 years, however, the thirteen colonies to the south of New France had fought and won their War of Independence, creating the United States of America. Since their seizure of New France, the British had been concerned that the French-speaking habitants might follow where the Americans led. The result was the abandonment of attempts at assimilation and recognition in the Quebec Act of 1774 of the major institutions of the inhabitants—the civil law, the seigneurial system and the Roman Catholic religion. With these assured, Canada resisted the blandishments of, and invasion by, the thirteen colonies and remained a British possession.

The American Revolution also brought thousands of Loyalists, fleeing the republican institutions of the rebels, into British North America. Settling in Nova Scotia, in what would soon be New Brunswick and the Eastern Townships and in the unsettled regions of Canada north of Lake Ontario, the Loyalists were the country's first substantial group of English-speaking settlers.

Their arrival demanded new political arrangements. Nova Scotia had had a representative assembly since 1758 and this was now to be extended to the Canadas. The Constitutional Act of 1791 divided the old province of Quebec into two colonies, Upper and Lower Canada, each with its own assembly. The colonies began to grow, if not to flourish, and soon a struggle for self-government or, as it was usually known in the Canadas, responsible government, was under way. That was achieved in 1849, but only after rebellions in both Canadas had been crushed with

severity in 1837 and the two colonies reunited in 1841; the latter step, suggested by Lord Durham in his famous report, was an attempt to foster the assimilation of the French Canadians.

That failed, as did the political unification of the Canadas. By the mid-19th century the colonies faced mounting costs combined with slowly growing revenues, hardly enough to build the railways and canals necessary for the infrastructure of a modern society. Markets were shrinking, particularly after Britain ended preferential tariffs and embarked on a course of free trade. The political picture was marked by bitter sectional conflict and political deadlock, exacerbated by the growing numerical preponderance of the English over the French. Finally, in the 1860s there was a threat from an increasingly hostile United States, just emerging from its Civil War and, many in British North America feared, not averse to re-uniting North and South in a victorious war against the scattered British North American colonies. These events, as well as the encouragement provided by a British government that was eager to cut its commitments in North America, resulted in a Canadian decision in 1865 to move toward a federation of all the British colonies—the Canadas, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland.

That goal was only partially achieved on July 1, 1867, when the Canadas, Nova Scotia and New Brunswick were joined in Confederation by virtue of the British North America Act. The Act, the constitution of the new Dominion of Canada, was the creation of a vigorous group of politicians, including John A. Macdonald, the first Prime Minister of Canada, Georges-Étienne Cartier, George Brown, Leonard Tilley and Charles Tupper. The constitution provided for a centralized federal system with the national government, sited at Ottawa, the dominant force, but leaving to the provinces matters of local concern. French and English were recognized as the official languages within the federal Parliament and courts and in the province of Quebec. The new nation was a parliamentary monarchy, with Parliament comprising the Governor General as the representative of the monarch, a House of Commons and an appointive Senate.

The Dominion was incomplete; Prince Edward Island and Newfoundland had declined to join, the great prairies to the west belonged to the Hudson's Bay Company and British Columbia, beyond the Rocky Mountains on the Pacific Coast, was impossibly remote in a vast land with no efficient transcontinental transportation route. The first step to having the new Dominion live up to its motto (*A Mari Usque ad Mare*, or *From Sea to Sea*) was acquisition of the western prairies; a new province of Manitoba was created in 1870 after a brief rebellion led by the able and charismatic Louis Riel was put down. The next year the province of British Columbia was created, with the promise of a railway as a condition, and in 1873 Prince Edward Island joined. The Northwest Territories were formed in 1874, their area encompassing all the lands between Manitoba and British Columbia; in 1885 they were the locale for the second Riel Rebellion, a revolt that failed because the Dominion militia reached the scene with some speed via the Canadian Pacific Railway, whose cross-country line had been completed that year. Twenty years later, the provinces of Alberta and Saskatchewan were organized out of the Northwest Territories, bringing the number of provinces to nine. Finally, in 1949 Newfoundland became the last province to join the union.



Bread-making at Lower Fort Garry National Historic Park, Man.

But Canada was and had to be more than territory. Policies were needed, national policies. The Conservative government of Sir John A. Macdonald, in power for most of the quarter-century after Confederation, proceeded to create and implement a National Policy. The railway was a major part of it, an essential linking element to tie the scattered inhabitants together. Encouragement of immigration was a second plank, but one that proceeded very slowly until the boom years of the early 20th century started the flood. A third measure, one involving high tariff protection, was believed necessary to encourage the growth of manufacturing in Canada. Only if Canadian industry could be made strong, only if the west could be populated and only if communications could be made swift and sure would Canada stand much chance of resisting the strong attraction of the United States.

Macdonald had laid the foundation of Canadian development, but his policies came to full fruition only under the Liberal Prime Minister, Sir Wilfrid Laurier, the first national leader of French heritage, who governed from 1896 to 1911. Laurier's years were the golden ones, a period when the Prime Minister could say in all seriousness that while the 19th century had belonged to the United States the 20th would be Canada's.

Despite the prosperity and expansion, the Laurier years saw the continuation and, indeed, the worsening of the cultural and class conflicts that had existed since 1867. The execution of Riel in 1885 strained English-French relations, as did attacks on French and Catholic schools in the West in the 1890s. New conflicts, those between imperialist English Canadians and their more nationalist and isolationist French-speaking compatriots, were fostered by the Boer War and the continuing debate over Canada's place in the British Empire. When Laurier presented Parliament with a reciprocity treaty with the United States in 1911, the ensuing election campaign

raised all these issues with a vengeance. The Liberals were defeated roundly and Robert Borden's Conservatives took power.

It fell to Borden to lead Canada through the Great War of 1914-18, a terrible time for Canada. More than 60,000 Canadians died overseas, while the unity of the country was strained by the conscription issue of 1917. Many Canadians who were not of English background resisted compulsory service and the election of 1917 was fought on this issue and won by Borden. His government, by this time a coalition of English-speaking Conservatives and Liberals, enforced conscription.

Military service also weighed heavily on farmers in Ontario and the West. The war had brought high prices and prosperity after years of tight money, but now the government was taking away the farmer's son. This grievance, added to long-standing complaints about the tariff that favoured the manufacturers, led to the creation of the Progressive Party and to its rise to prominence in the election of 1921.

Organized labour also made gains during the war, but this progress was largely lost after a general strike at Winnipeg in 1919 was broken by the massive intervention of the federal government. Labour was weak for years after, not again reaching for a major role until the Depression and World War II.

The nation as a whole found new opportunities in the changes in the Dominion's status that the Great War had brought. Canada had entered the war as a colony of Britain, but it emerged a near equal, a status that was formalized by the Statute of Westminster in 1931.

For most of the years between the wars, however, Canada took little part in world affairs. The Prime Minister was W.L. Mackenzie King, Laurier's heir and a cautious man. King concentrated on lowering taxes and tariffs. Canada progressed slowly and received a serious setback with the onset of the Depression in 1929.

The Conservatives under R.B. Bennett, who took power in the general election of 1930, faced continuing huge unemployment rolls and declines in trade and gross national product. Canada was in trouble and the people sought for solutions in new political parties. Social Credit won power in the province of Alberta, the Co-operative Commonwealth Federation (CCF) attempted to link labour and farm groups in Ontario and the West, and the Union Nationale led conservative nationalists to victory in Quebec. The Depression also demonstrated that the federal government lacked the constitutional power to deal with a peacetime national emergency and the King government, re-elected in 1935, launched a great inquest into constitutional powers. The Royal Commission reported in 1940, recommending sweeping changes, but by then Canada was at war and Ottawa already had the power to act expeditiously in wartime.

The war years from 1939 to 1945 were extraordinary ones. The transition to total war under the King government turned Canada into a major military, industrial and financial power. There were a million men in the armed forces, billions of dollars for mutual aid to Canada's allies and full employment in booming munitions plants. There was difficulty over conscription in 1942 and 1944, but it left fewer scars than it had in 1917. The government showed similar skill in arranging the transition from war to peace and the economic boom continued unabated through the 1950s.

Mackenzie King stepped down in 1948, to be succeeded by Louis St. Laurent. The St. Laurent government led Canada into closer military and economic relations with



Reconstruction work in progress at the Halifax Citadel.

the United States, taking Canada into the North Atlantic Treaty Organization (NATO) and negotiating entry to the North American Air Defence Command.

However, the continuing Canadian economic boom was financed by American money invested in Canada or borrowed in New York, and there was enough concern over these trends to lead to a victory by the Conservatives under John Diefenbaker in 1957. Diefenbaker's government was in power from 1957 to 1963, a stormy period both domestically and internationally. By the late 1950s economic growth was slowing, unemployment was rising and relations with the US were worsening, in part because of Diefenbaker's reluctance to arm the Canadian Forces with nuclear weapons. Quebec was growing more restive with Confederation, seeking greater provincial autonomy and greater recognition for the French language throughout the country.

Lester Pearson's Liberal government, elected with a minority of the seats in the House of Commons in 1963, set up a Royal Commission on Bilingualism and Biculturalism to examine the whole field of French-English relations. Over the course of the following five years, a period marked by political scandals and social reforms, the Pearson government devoted increasing amounts of time to the question of Quebec.

His strong federalist views were perhaps the major reason for the choice of Pierre Elliott Trudeau as Pearson's successor in 1968, and Trudeau led his party to victory in the general election that year. Two years later, the government imposed the War Measures Act and moved some 10,000 troops into Quebec in response to the kidnapping of a British trade commissioner and the kidnapping and murder of a Quebec Cabinet minister by the Front de Libération du Québec. That strong federal response seemed at the time to end talk of separatism in Quebec and for the next six years other issues dominated the stage.



The home of Emily Carr in Victoria, BC.

The Trudeau government made some changes in Canadian foreign policy, reducing the military commitment to NATO and stressing the need to protect and enhance Canadian sovereignty. Economic issues, in particular high unemployment and rising inflation, received much attention and probably were the major reasons behind the losses Trudeau's party suffered in the 1972 election, which left it governing in a minority position. For the next two years it attempted to deal with the economy, with growing problems of energy supply and with the American influence on the economy and Canadian culture. In 1974 the government was returned to office with a comfortable majority.

In the next two years two of the opposition parties changed their leaders. The New Democratic Party, the heir to the CCF, selected Ed Broadbent, an Ontario university professor and the Member of Parliament for Oshawa, Ont. Early in 1976, the Conservatives chose Joe Clark, a young Alberta MP. Both Clark and Broadbent stressed the economic failures of the government, focusing attention on the wage and price controls introduced by the Liberals in 1975. That issue had particular piquancy for the Conservatives, who had advocated controls in the 1974 election while Trudeau had scored heavily by arguing against their plan.

But the economy was overshadowed as the major national issue by the results of the Quebec provincial elections of November 15, 1976. Under the leadership of the able and popular René Lévesque, the Parti Québécois (PQ) won a safe majority in the National Assembly. Pledged to turn Quebec into an independent nation, the PQ proposes to hold a referendum on the question, but neither the wording of the question nor the date had yet been specified as this was written. The Liberal government, under Trudeau, is pledged to support the continuation of a bicultural Canada. The next few years will see great efforts made to resolve the conflict; their outcome is still unclear.

Population

The total population of Canada in 1976 was 22,992,604, an increase of 26.1 per cent over the total population count of 18,238,247 reported in the 1961 Census.

In spite of this overall increase, Canada has actually experienced declining population growth rates during this period. The census figures presented in Table 1 show a mean annual increase of 1.9 per cent in the period 1961-66, falling to 1.6 per cent in the years 1966-71. Estimates suggest that the mean annual increase for the period 1971-76 was 1.3 per cent, which would indicate that the trend toward lower population growth rates has been continuing.

As a result of the different population growth rates for each province, over 80 per cent of Canada's total population is now concentrated in Quebec, Ontario, Alberta and British Columbia. Table 1 shows that British Columbia, Alberta and Ontario were the only provinces whose mean annual increases, of 3.4 per cent, 2.5 per cent and 2.2 per cent respectively, exceeded the national mean of 1.7 per cent for the period 1961-76. The Yukon Territory and the Northwest Territories, which have relatively small populations compared to the provinces, have also experienced high growth rates over the period, the population of the Northwest Territories having increased by 5.8 per cent and that of the Yukon Territory by 3.1 per cent.

Birth, death, immigration and emigration are the components of population change. The high mean annual birth rate (28.0 per thousand in 1951-56) and mean annual rate of natural increase (19.6 per thousand) are representative of the rapid growth that occurred in the early postwar period, which peaked to record highs in the mid-1950s (Table 2). Lower rates of growth in succeeding years resulted mainly from falling birth rates beginning in the early 1960s and continuing on to 1975. Death rates, though declining slightly, have remained relatively stable compared to other components of growth. Net international migration (total emigration subtracted from total immigration) during the early and mid-1950s (7.9 per thousand in the period 1951-56 and 5.6 per thousand in 1956-61) has also had a strong influence on Canada's population growth.

Canada had a mean population density of 2.3 persons per square kilometre in 1971; according to estimates this figure had risen to 2.5 in 1975, still one of the lowest population densities in the world. However, this figure takes into account the whole land area of the country and it should be kept in mind that vast spatial variations exist. For example, some of the larger urban areas have as many as 7,800 persons per square kilometre. Prince Edward Island, Nova Scotia and New Brunswick are the three smallest provinces in terms of land area, but have population densities well above those of other parts of Canada.

Over the years, Canada's population has changed from predominantly rural to predominantly urban. According to the census carried out in 1901, 2,005,080 (only 37.5 per cent of the total population) lived in urban communities. By 1971, 16,410,785 Canadians (76.1 per cent of the total population) were located in urban areas; of this urban population the largest part (62.5 per cent) lived in centres of 100,000 or more and the remainder in communities ranging from 1,000 to 99,999 inhabitants. The term "urban population", as used in the census, refers to all population living in incorporated cities, towns and villages and in unincorporated places with pop-

Table 1. Numerical and percentage distribution of population, Canada and provinces, 1961, 1966, 1971 and 1976

	Population in thousands ¹				Percentage distribution		Mean annual percentage change			
	1961	1966	1971	1976	1976		1961-76	1961-66	1966-71	1971-76
Canada	18,238	20,015	21,568	22,993	100.0		1.7	1.9	1.6	1.3
Newfoundland	458	493	522	558	2.4		1.5	1.5	1.2	1.4
Prince Edward Island	105	109	112	118	0.5		0.8	0.8	0.6	1.1
Nova Scotia	737	756	789	829	3.6		0.8	0.5	0.9	1.0
New Brunswick	598	617	635	677	2.9		0.9	0.6	0.6	1.3
Quebec	5,259	5,781	6,028	6,234	27.1		1.2	2.0	0.9	0.7
Ontario	6,236	6,961	7,703	8,264	35.9		2.2	2.3	2.1	1.5
Manitoba	922	963	988	1,022	4.4		0.7	0.9	0.5	0.7
Saskatchewan	925	955	926	921	4.0		-	0.6	-0.6	-0.1
Alberta	1,332	1,463	1,628	1,838	8.0		2.5	2.0	2.3	2.6
British Columbia	1,629	1,874	2,185	2,467	10.7		3.4	3.0	3.3	2.6
Yukon Territory	15	14	18	22	0.1		3.1	-1.3	5.7	4.4
Northwest Territories	23	29	35	43	0.2		5.8	5.2	4.1	4.6

¹ Based on census data for 1961, 1966, 1971 and 1976.
- Nil or zero.

Table 2. Components of population change, 1951-56, 1956-61, 1961-66, 1966-71 and 1971-75

Date	Births	Deaths	Natural increase	Immigration	Emigration	Net international migration	Total change
							%
Rate per thousand ¹							
1951-56.....	28.0	8.4	19.6	10.4	2.5	7.9	27.5
1956-61.....	27.5	8.0	19.5	8.8	3.2	5.6	25.1
1961-66.....	23.5	7.6	15.9	5.6	2.9	2.7	18.6
1966-71.....	17.8	7.4	10.5	8.6	4.1	4.5	14.9
1971-75.....	15.6	7.4	8.2	7.6	2.1	5.5	13.7

¹ Mean rate per one thousand people, for each time interval indicated.

ulation densities of 386 or more people per square kilometre. The population in the built-up fringes of these places is also considered to be urban if the population density is 386 or more persons per square kilometre.

Of the 5,157,525 persons making up Canada's rural population in 1971, 1,419,796 (27.5 per cent) lived on farms, while 3,737,730 (72.5 per cent) did not. The term "farm population", as used in the census, includes all of the population living in dwellings situated on farms in the rural areas. For census purposes a farm has been considered to be an agricultural holding of one or more acres, with sales of agricultural products of \$50 or more in the previous year.

Ontario, Quebec and British Columbia had the largest proportions of their total populations living in the urban areas, the percentages being 82.4 per cent, 80.6 per cent and 75.7 per cent respectively. Prince Edward Island, the Northwest Territories and Saskatchewan had the largest proportions of their populations classified as rural, 61.7 per cent, 51.7 per cent and 47.0 per cent respectively, with the remaining Atlantic provinces following closely in this category. Alberta and Saskatchewan reported the largest proportions of rural farm population relative to the total rural population, 54.7 per cent and 53.6 per cent respectively.

In 1976 over 50 per cent of Canada's total population resided in 23 census metropolitan areas (CMAs), as shown in Table 3. According to the census definition, these major urban agglomerations each contain the main labour-force market for a continuous built-up area having a population of 100,000 or more.

Population figures for 1976 show that Montreal and Toronto were Canada's largest metropolitan areas, each having over 2.6 million inhabitants, while



Vancouver had grown to over a million. In terms of proportionate growth, however, Calgary and Edmonton have developed most rapidly in recent years, Calgary having increased its total population by 16.5 per cent in the period 1971-76 and Edmonton by 11.7 per cent. In contrast, the population of Sudbury actually declined slightly over this time interval, while the populations of Halifax, Montreal and Chicoutimi-Jonquière experienced relatively small increases.

The age structure of a population is of vital interest to all levels of government involved in the designing of social and economic programs for their constituents. Educational planners, for example, have noted a sharp drop in school enrolment rates at the elementary and secondary school levels as a result of the declining proportions of the population in the younger age groups. Table 4 shows that the proportion of Canada's population under 15 years of age declined by 3.2 per cent in the five-year period 1966-71 and by 4.4 per cent in the four-year period 1971-74. This was the result mainly of the declining birth rates in previous years, a fact clearly indicated by the decrease of 17.5 per cent in the number of children 0-4 years of age in the period 1966-71.

Table 3. Population of census metropolitan areas (CMAs) 1971 and 1976

	1971 ¹	1976	Percentage change
Canada	21,568	22,993	6.6
Total CMAs	12,604	13,492	7.1
Percentage of total population	58.4	58.7	0.3
Percentage of urban population	76.0 ²	...	...
Toronto	2,602	2,803	7.7
Montreal	2,729	2,802	2.7
Vancouver	1,082	1,166	7.8
Ottawa-Hull	620	693	11.8
Ontario portion	474	521	9.9
Quebec portion	146	172	18.0
Winnipeg	550	578	5.2
Edmonton	496	554	11.7
Quebec City	501	542	8.1
Hamilton	503	529	5.2
Calgary	403	470	16.5
St. Catharines-Niagara	286	302	5.6
Kitchener	239	272	14.1
London	253	270	6.9
Halifax	251	268	6.9
Windsor	249	248	-0.5
Victoria	196	218	11.5
Sudbury	158	157	-0.4
Regina	141	151	7.4
St. John's	132	143	8.8
Oshawa ³	120	135	12.4
Saskatoon	126	134	5.8
Chicoutimi-Jonquière	126	129	1.6
Thunder Bay	115	119	4.0
Saint John	107	113	5.8

¹ Based on 1976 area.

² Based on 1976 definition.

³ Not a Census Metropolitan Area in 1971.

... Not available.

Table 4. Population by age groups, 1966, 1971 and 1974¹

Age group	Population in thousands			Percentage distribution			Percentage change	
	1966	1971	1974	1966	1971	1974	1966-71	1971-74
Total	20,015	21,568	22,446	100.0	100.0	100.0	7.8	4.1
Under 15	6,592	6,381	6,097	32.9	29.6	27.2	-3.2	-4.4
0-4	2,197	1,816	1,766	11.0	8.4	7.9	-17.5	-2.8
5-9	2,301	2,254	1,979	11.5	10.4	8.8	-2.0	-12.2
10-14	2,093	2,311	2,352	10.5	10.7	10.5	10.4	1.8
15-64	11,884	13,443	14,466	59.4	62.3	64.4	13.1	7.6
15-19	1,838	2,114	2,277	9.2	9.8	10.1	15.1	7.7
20-24	1,461	1,889	2,033	7.3	8.8	9.1	29.3	7.6
25-34	2,483	2,889	3,362	12.4	13.4	15.0	16.4	16.4
35-44	2,543	2,526	2,549	12.7	11.7	11.4	-0.7	0.9
45-54	2,078	2,291	2,423	10.4	10.6	10.8	10.3	5.8
55-64	1,480	1,732	1,822	7.4	8.0	8.1	17.0	5.2
65 +	1,540	1,744	1,883	7.7	8.1	8.4	13.3	7.9

¹ Based on census data for 1966 and 1971 and on estimates for 1974.

As the population "bulge" resulting from high birth rates in the 1950s has moved into early adulthood the working age group (15-64 years of age) has increased rapidly. The proportion of the total population between the ages of 15 and 64 years increased by 13.1 per cent during the period 1966-71 and by 7.6 per cent in 1971-74. In addition to birth and death rates, immigration has a strong influence on the growth of this broad working age group, especially at the younger age levels. In the period from January 1969 to May 1971, for example, 47.8 per cent of the population arriving from foreign lands were 20-34 years of age and 57.8 per cent were aged 20-44.

The changing proportion of the population in the older age groups is of particular interest to those planning facilities for the care of the elderly and determining future pension needs. This segment of the population has been characterized by rapid growth in recent years, increasing by 13.3 per cent in the period 1966-71 and by 7.9 per cent in 1971-74; the total population increased by 7.8 per cent and 4.1 per cent respectively during the same periods. Declining birth rates and an increased life expectancy are the two major causative factors in the growth in the proportion of the population 65 years of age and over.

Of the 15,187,415 persons 15 years of age and over in Canada in 1971, 4,290,675 (28.2 per cent) were single (never married); this represented an increase of 525,842 (14.0 per cent) over the five-year period 1966-71. The figures in Table 5 also show that in 1971 31.6 per cent of the adult male population and 25.0 per cent of the adult female population were single; this differential is caused mainly by the fact that men tend to remain single longer than women. In the 1971 Census, for example, 67.3 per cent of the male population 20-24 years of age were reported as single, compared to 43.5 per cent of the female population in that age group.

In 1971, 9,777,605 people (64.4 per cent of the total population 15 years of age and over) were married, the number of married persons having increased by 1,054,388 over the period 1966-71. However, the married portion of the population fell slightly during the same period, from 65.0 per cent in 1966 to 64.4 per cent in 1971; this may

Table 5. Numerical and percentage distribution of population 15 years of age and over, by marital status, 1966 and 1971

Marital status	Population in thousands				Percentage distribution				Percentage change, 1966-71			
	1966		1971		1966		1971		1966		1971	
	Total	Male	Female	Total	Male	Female	Total	Male	Total	Male	Female	Total
Total	13,423	6,681	6,742	15,187	7,532	7,655	100.0	100.0	100.0	100.0	100.0	13.1
Single	3,765	2,101	1,664	4,291	2,378	1,913	28.0	31.4	28.2	31.6	25.0	14.0
Married ¹	8,723	4,359	4,364	9,778	4,889	4,889	65.0	65.2	64.4	64.9	63.9	12.1
Widowed	870	196	675	944	191	753	6.5	2.9	10.0	2.5	9.8	8.5
Divorced	65	25	39	175	74	101	0.5	0.4	0.6	1.0	1.3	170.3
												193.0
												155.8

¹ Includes separated persons not having obtained a divorce.Table 6. Ten vocational training courses¹ most commonly reported by men and by women, 1971

Course	Reported by men		Course	Reported by women	
	Number	%		Number	%
All kinds	1,143,270	100.0	All kinds	828,235	100.0
Auto mechanics and repair	89,060	7.8	Typing, shorthand and secretarial sciences	190,350	23.0
Electrical equipment installation and repair	70,500	6.2	Registered nursing and nursing assistant	140,215	16.9
Tool, die-making and machinists	53,220	4.7	Barbering and hairdressing	77,435	9.3
Technology (architectural, engineering, mathematical and pure sciences)	49,600	4.3	Elementary and secondary school teaching	31,435	3.8
Welding	47,520	4.2	Medical and dental technology	18,185	2.2
Radio, TV and other electronic equipment repair	47,300	4.1	Garment making and repair	17,620	2.1
Accounting and auditing	37,985	3.3	Fine and applied arts	16,820	2.0
Drafting	36,995	3.2	Bookkeeping and account recording	14,150	1.7
Carpentry	36,165	3.2	Accounting and auditing	14,125	1.7
Pipe trades	34,985	3.1	Power sewing	12,065	1.5
All other	639,940	56.0	All other	295,835	35.7

¹ Includes vocational, trade and apprenticeship training.

be attributed to demographic factors such as the changing age structure and the changing nuptiality patterns.

In 1966 there were 64,776 divorced persons in Canada; by 1971 this figure had risen to 175,115, an increase of 170.3 per cent. While the general trend over the years has been toward higher divorce rates and toward a drop in the age of persons obtaining divorces, the marked increase between 1966 and 1971 may be attributed directly to new legislation passed in 1968 making divorces easier to obtain.

One of the most striking features of marital status statistics is the larger proportion of widows over widowers. In 1971, 191,125 men (2.5 per cent of the adult male population) were widowed, in contrast to 752,895 women (9.8 per cent of the adult female population). This wide difference is attributed to higher death rates of males and to higher probability of remarriage of widowers.

Of the people in Canada who were 15 years of age or over in 1971 and had to all intents and purposes completed their full-time formal education, 4,899,350 (37.2 per cent) had obtained only an elementary school education and 6,976,440 (53.0 per cent) had terminated their education at the secondary level. However, these figures take into account only formal academic education in the elementary and secondary school systems of the provinces and territories; 11.8 per cent of all Canadians with this level of education would have obtained, in addition, some form of vocational trade or apprenticeship training.

In the same age group 1,292,230 (9.8 per cent) of those who no longer attended school on a full-time basis had obtained one or more years of education at the university level. Of these 613,785 (4.7 per cent of the total population) had obtained a university degree and the remaining 678,450 (5.2 per cent) had one or more years of university but had not obtained a degree. British Columbia led the provinces, with 163,690 (11.8 per cent of its total population) having attained education at the university level; it was closely followed by Alberta, with 106,270 (11.1 per cent), and Ontario, with 482,700 (10.1 per cent) in this category.

Educators at all levels have been striving to satisfy the needs not only of the university-bound, but also of the great majority who require adequate preparation for early entry into the labour force. This has become particularly important as Canada has grown industrially and the need for unskilled and semi-skilled workers has diminished. In 1971, 1,971,510 (13.0 per cent of Canada's total population 15 years of age and over) had completed some form of apprenticeship, trade or vocational training. Foremost among the provinces was again British Columbia, where 260,275 (16.5 per cent of the total population) had completed training courses in 1971; Alberta and Manitoba followed closely, Alberta reporting 174,130 (15.6 per cent) and Manitoba 92,275 (13.2 per cent) of their total populations in this category.

Trade and occupational training schools, community colleges, technical institutes and systems of apprenticeship offer a wide variety of courses. Auto mechanics and repair and electrical equipment installation and repair are courses most frequently reported as having been taken by men, while typing, shorthand and secretarial science and registered nursing and nursing assistant courses have been preferred by women. It is also apparent from the figures of Table 6 that a substantial amount of training taken by women has been concentrated in relatively few fields—those mentioned above, and hairdressing—while training taken by men has been much more widely diversified.

The Native Peoples

Indians

On December 31, 1975, there were 282,762 people registered as Indians under the provisions of the Indian Act of Canada. There were 574 separate Indian bands, for whom 2,284 reserves have been set aside; total reserve area was about 2 484 000 ha (hectares). Approximately half of the registered Indians, mainly those living in Ontario and the three Prairie provinces, are entitled to receive treaty payments as a result of treaties between their ancestors and the Crown.

The number of persons of Indian ancestry who are not entitled to be registered under the provisions of the Indian Act is unknown. Included among these people are Indians who have given up their Indian status and band membership through the legal process known as enfranchisement, Indian women who have married non-Indians, the Métis and the descendants of persons who received land or money-scrip.

There are 54 different Indian languages or dialects in Canada, belonging to 10 major linguistic groups: Algonkian, Iroquoian, Siouan, Athapaskan, Kootenayan, Salishan, Wakashan, Tsimshian, Haida and Tlingit.

Education. The provision of education services to Indians living on reserves is the responsibility of the federal government, which funds a complete range of education services ranging from four-year-old kindergarten to university, professional or technological education and trade training through the Department of Indian and Northern Affairs. More than half the Indian student population attend schools operated by provincial boards; the remaining students attend schools on reserves operated by either the department or the Indian bands.

Since the acceptance of the National Indian Brotherhood paper "Indian Control of Indian Education" in 1973, increasing numbers of Indian bands are assuming control of their schools and other educational programs; out of a total of 574 Indian bands, 29 now manage their own schools. A major aim of government involvement in Indian education has been to facilitate the transfer of education programs to Indian bands and to develop appropriate curricula in consultation with them. Almost all of the 270 federal schools operated by the department now offer culturally enriched programs and many of the provincial schools attended by Indian or Inuit children include language courses or native studies units as part of the regular school program.

Several provinces and universities have designed and conducted special teacher-training courses to encourage natives to enter the teaching profession; paraprofessional courses are also conducted to train Indian teacher aides and social counsellors for federal, provincial and band-operated schools. Vocational training, vocational counselling and employment placement programs have been supported by the Department of Indian and Northern Affairs in co-operation with the Department of Manpower and Immigration. The department has also assumed responsibility for training of elected and appointed officials of Indian bands and Inuit settlement councils that is specifically related to their official duties.

Local Government. A policy encouraging the development of local government on Indian reserves began to evolve in 1965 in response to the expressed wishes of



Hanging salmon in the smoke-house.

the Indian people to assume greater responsibility for the administration of their own affairs. At that time some 26 Indian bands from across Canada assumed responsibility for the administration of specific departmental programs whose budgets totalled \$66,000. Increased interest since then is reflected by the fact that during the fiscal year 1975-76 Indian and Inuit councils administered the expenditure of approximately \$120 million in public funds and more than \$20 million in band funds on a variety of local government projects such as housing, education, community facilities, social services and recreation. Depending on a band's desire to become involved and its management capability, it can assume total program responsibility, manage only a segment or share responsibility with the department.

Economic Development. The department has undertaken jointly with the Indian people a number of studies and task forces on economic planning and socio-economic development. In addition, an information system is being designed to enable the department to work more effectively with Indian people in implementing new operating activities and socio-economic strategies.

The operational aspects of economic development are under review, the Indian Economic Development Fund is stabilized and the objectives of the fund have been reassessed. Large economic development projects are being approached with more fully developed criteria for planning and improved implementation. New programs in the Economic Development Branch are being structured to serve as a central point of service for joint Indian-government and interdepartmental organizations. A socio-economic strategy is being formulated jointly with the Indian people to include the strengthening of Indian constitutional and cultural identity, the achieving of a decent standard of living and the assurance of educational, political and social parity for Indian people. The importance of Indians' maintaining



Steer-riding at the Sarcee Indian Rodeo.

traditional ties with, and economic control over, their lands is a major factor in the development of new policies.

Recognizing the positive values of the Indian culture, the government continues to develop systems and processes that better meet the needs of Indian people and to adopt specific economic development tools geared to their special needs. In this way Indian people will be able to develop their own way of managing their own resources, in their own time.

Inuit (Eskimos)

During recent years the many changes and developments in the Canadian North have affected almost every aspect of the lives of the more than 19,000 Inuit living there. These northern people have survived for many centuries in spite of the harsh conditions under which they have had to live, and in recent years they have been offered new opportunities and facilities for strengthening their capacity to survive.

Early accounts and archaeological research show that the Canadian Inuit once ranged farther south than they do now, particularly on the Atlantic seaboard. Traditionally, they were mainly a coastal people and fish and sea mammals were their sources of food, fuel and clothing. Centuries ago, however, one group broke away from the others to follow the caribou herds to the interior, where they formed a culture that was much different. They lived on the caribou herds and fish from the inland lakes, made fires from shrubs instead of blubber and rarely visited the sea.

The early explorers of the Canadian Arctic met Inuit from time to time over a period of some 300 years, but had few dealings with them; development in Arctic Canada came at a much later date than in other arctic lands. However, with the arrival of the whaling ships and the fur traders early in the 19th century changes began to take place. Through their dealings with whalers and traders the Inuit began to move into a position of some dependence upon the white man's goods and supplies. The traditional nomadic life was becoming less attractive to them.

By 1923 trading posts had been built along both shores of Hudson Strait, down the east coast of Hudson Bay to Port Harrison and up the west coast of Hudson Bay to Repulse Bay; similar development took place in the western Arctic. Today the Hudson's Bay Company has some 30 posts in arctic regions.

With World War II came a rapid development in air travel, and the building of defence installations and of meteorological and radio stations. During the past two decades the reduction of the Inuit's isolation has proceeded apace.

Many of these people have made a difficult and dramatic transition from nomadic hunters to modern urbanized residents. By such means as the Anik communications satellite, telephone, radio and television transmissions are now beamed into the Inuit household.

The sled dogs, long-time companions and necessity to the Inuit, have gone; the motorized toboggan has replaced them. For longer journeys the airplane is the Arctic taxi, and few communities are without airstrips. Modern technology in the form of STOL (short take-off and landing) and jet aircraft have considerably shrunk the vast spaces of the Inuit domain.

Various programs initiated by the federal government and carried on since 1970 by the territorial government—programs in such areas as education, social affairs, local government and economic development—have also contributed to the dramatic change in the Inuit way of life. For example, today co-operatives do a total volume of business of over \$8 million annually and to a large extent control the marketing of all Inuit art. Elementary schools have been built in every Inuit community, and beyond Grade 6, or 8 in some locations, students attend pre-vocational or secondary schools either elsewhere in the Arctic or at locations in southern Canada.

Many communities have evolved from having a resident government administrator to becoming incorporated hamlets or villages, managing their own affairs through elected councils. The Council of the Northwest Territories, a provincial-style body, has six Inuit elected members.

Concern for the survival of Inuit identity and culture resulted in 1971 in the formation of Inuit Tapirisat of Canada (ITC—the Eskimo Brotherhood), an association funded by the Secretary of State in the interest of the Inuit people. In consultation with the Department of Indian and Northern Affairs, ITC has initiated many programs aimed at improving the lot of the Inuit. Activities of the association and its related Inuit Cultural Institute include a legal service centre to assist Inuit of the eastern Arctic in legal matters, a language commission established to make recommendations concerning the standardization and implementation of Inuit language orthographies, a communications program aimed at inter-settlement communication through UHF radio and a special project in International Women's Year entitled the Role of Women in Inuit Society. These programs and activities have been assisted by grants, contributions and loans from the Department of Indian and Northern Affairs and the Secretary of State.

With the spirited search for oil, gas and minerals in the Arctic, much is being done to create and make available opportunities for the employment of Inuit in the petroleum and related industries. However, some adult Inuit still live by their traditional skills of hunting, trapping and fishing, and one of the most successful and remarkable revenue-producing pursuits of the Inuit is based on their creative



A rat-skinning contest at the Eskimo Summer Games.

talents, expressed in the media of vibrant graphics and stone, bone and ivory sculpture depicting their lifestyle and culture. This industry is expanding, and local co-operatives ensure the artist a fair return for his or her works of art.

Native Claims

The question of settling native claims has been before Canadian governments for many years.

As a result of nation-wide consultation on proposed changes to the Indian Act during the year 1968-69, the National Indian Brotherhood sponsored a National Committee on Rights and Treaties to investigate Indian rights with a view to proposing revisions to the Indian Act and to consider how treaty rights had been administered in the past so that Indian claims could be identified and put forward to the government. In addition, a Commissioner for Indian Claims was appointed to examine, classify and propose means of settlement of claims submitted to him. In 1970 the government began funding native groups to enable them to research rights and treaties.

On August 8, 1973, the Minister of Indian and Northern Affairs announced the federal government's policy on comprehensive claims by Indian and Inuit people. This policy recognized the existence of native interest in areas of Canada where it had not been properly extinguished by treaty or superseded by law. It stated that claims made by native groups on the basis of this interest—which represented the loss of traditional use and occupancy of land in these areas—must be settled, that the most promising avenue for reaching settlement was through negotiation and that settlement would extinguish this interest in return for compensation for its loss.

Comprehensive claims were to be settled on the basis of the awareness that such claims involved not only money but also the loss of a way of life, and therefore could include such elements as hunting, fishing and trapping rights, land, resource revenue sharing, participation in local and regional government and preservation of cultural identity. The areas in question were taken to be British Columbia, northern Quebec, the Yukon Territory and the Northwest Territories.

Other types of claims recognized by the policy statement were classified as specific claims. These were based on longstanding government policy, reaffirmed in 1969, that lawful obligations must be met. They encompassed claims relating to administration of land and other Indian assets under the various Indian Acts and Regulations and those relating to the actual fulfilment or interpretation of Indian Treaties or Agreements and of Proclamations affecting Indians and reserve lands.

In July 1974 an Office of Native Claims was set up in the Department of Indian and Northern Affairs to be primarily responsible for representing the minister and the department in negotiations with native groups about their land claims and related grievances. A year later a Special Government Representative was appointed and given a particularly broad mandate to deal with comprehensive native claims, as a further mark of the seriousness that the government attached to the satisfactory settlement of these claims. In December 1975 a joint committee of federal cabinet ministers and the executive of the National Indian Brotherhood was established to provide a forum for the discussion of major problems and issues, chief among which were the revision of the Indian Act and the way in which native claims might best be handled.

As of the end of March 1977, native claims in several areas were being dealt with. (1) A final agreement had been reached with the Cree and Inuit people of northern Quebec (the James Bay Agreement, signed on November 11, 1975, and ratified by the Crees on December 4 and by the Inuit on March 12, 1976) and federal legislation putting it into effect had been given second reading and was being studied by a House of Commons Standing Committee. (2) In February 1976, Inuit Tapirisat of Canada presented a claim and a proposal for its settlement to the federal government on behalf of the Inuit people of the Northwest Territories; this was subsequently withdrawn by ITC to allow further study of certain segments and consultation at the community level, with a view to resuming discussions with the federal government early in the summer of 1977. (3) In the early winter of 1976, the Committee for Original People's Entitlement, an ITC affiliate in the western Arctic, announced that it would submit a claim separate from that of ITC to the federal government some time in the late spring of 1977. (4) The federal government also received a claim settlement proposal in October 1976 from the Indian Brotherhood of the Northwest Territories concerning the lands in the Mackenzie Valley area, and discussions were expected to begin in the spring of 1977. (5) The Métis Association of the Northwest Territories announced that it would be preparing its own claim proposal over the winter of 1976-77 for presentation to the government some time in 1977. (6) In October 1976 the federal government appointed a Special Claims Representative for the Yukon Territory to represent it in informal discussions with the Council for Yukon Indians, leading to substantive negotiations on their comprehensive claim; discussions took place during the winter of 1976-77 and led to both parties' endorsing a concept of co-operative planning rather than confrontation in the claim development and negotiation process.

Also, from 1970 to the end of March 1977, the federal government had disbursed approximately \$12.2 million in grants and contributions and \$11.8 million in loans to native groups to enable them to conduct research into treaties and aboriginal rights and to develop and negotiate their claims. It had also disbursed approximately \$16 million in settlement of native claims.



In July 1977 Indians from five tribes gathered at Blackfoot Crossing, on the Bow River east of Calgary, to re-enact the September 1877 signing of Treaty No. 7.



Official Languages

Throughout Canada's history the existence of two major linguistic groups has been one of the dynamic forces that shaped the country and contributed much to its unique character. To safeguard this valuable national heritage, the federal government has taken a number of steps to ensure that both English-speaking and French-speaking Canadians have equal opportunities to participate in Canada's future.

In 1963 it appointed a Royal Commission on Bilingualism and Biculturalism to inquire into a wide range of questions relating to language and culture in Canada. Following the publication of the first book of the commission's final report, the federal government proposed an Official Languages Bill, which Parliament adopted in July 1969 and which, accordingly, came into force in September of the same year.

The Act stipulates that "the English and French languages are the official languages of Canada" and that they "possess and enjoy equality of status and equal rights and privileges as to their use in all the institutions of the Parliament and Government of Canada".

The Act provides three other major sections, under which: statutory and other government documents directed to or intended for the Canadian public shall be available in both official languages; bilingual districts may be created where the official language minority comprises at least 10 per cent of the population of a given area, and in those districts, in the National Capital Region and in other areas where there is sufficient demand federal government services shall be available in both official languages; and a Commissioner of Official Languages reporting directly to Parliament shall ensure compliance with the Act. It should be noted that the Act—and indeed federal official languages policy as a whole—aims not to make all Canadians "bilingual", but on the contrary to ensure that, wherever they are reasonably concentrated, those who speak English and those who speak French may each deal with the federal government in their own language.

Responsibility for administering official languages policies and programs is shared by Treasury Board, Department of the Secretary of State, the Public Service Commission and the National Capital Commission. In addition, the Commissioner of Official Languages is responsible for ensuring that the official languages are recognized in practice and that the institutions of the Parliament and Government of Canada conduct their business in compliance with the spirit and intent of the Act.

Treasury Board

The Treasury Board is responsible for the administration of the government's language policy in federal departments and agencies within the board's jurisdiction. However, Crown corporations and certain other federal agencies such as the Bank of Canada, Air Canada and the Canadian National Railways do not fall within the board's mandate for official languages purposes.

Official Languages Branch. This branch develops and communicates government policies and programs for the application of the Official Languages Act within the public service, monitors their implementation and evaluates their effectiveness.

The branch comprises the Policy and Evaluation Division, the Operations Division and the Documentation and Reference Centre.

Policy and Evaluation Division. This division develops, recommends and issues policies and guidelines on official languages matters to federal departments and agencies, and evaluates progress made toward the attainment of objectives. It includes a Policy Group, which is responsible for the formulation and recommendation of policy options and for analysis, assessment and interpretation of existing policies. Existing and evolving policies are directed toward developing a public service that is capable of serving the Canadian public in either official language and in which both language groups can fully participate. The division also contains an Evaluation Group responsible for defining appropriate indicators of program performance in collaboration with other units in the branch and other central agencies; this involves collecting and analyzing data on progress made toward the objectives set out in the Official Languages Act, the Parliamentary Resolution of 1973 and the administrative guidelines approved by Treasury Board.

Operations Division. In close co-operation with other federal departments and agencies, this division co-ordinates and monitors the implementation of official languages policy and programs in the public service.

It ensures that approved policies and guidelines are incorporated into departmental programs designed to achieve official languages objectives and maintains liaison with staff associations, through the National Joint Council, and with Crown corporations. In co-operation with the Communications Division, it assures the development of an overall information program designed to inform employees within the public service and to assist departments and agencies in the development and implementation of their own information programs. It plans and recommends related procedures required to give effect to the government official languages policy. In co-operation with the Personnel Policy Branch it ensures that departments and agencies possess relevant data through the provision and support of an on-line personnel information system. It reviews requests and recommends to the board the application of special procedures and the allocation of resources required by departments and agencies for the attainment of the objectives.

The Documentation and Reference Centre. The Documentation and Reference Centre provides a quick, up-to-date information and reference service to the Official Languages Branch, to other federal departments and agencies and to the general public on any matters relating to the Official Languages Act, policy and programs. The centre also distributes information material issued by the Official Languages Branch to departments, agencies and other interested groups.

Department of the Secretary of State

The Department of the Secretary of State has a general responsibility for encouraging and assisting the development of the official languages in education and in provincial and municipal administrations in the private sector, and a special responsibility, through its Translation Bureau, for meeting the translation, interpretation and terminology requirements of the Government of Canada. The department also has a program of support for minority official language groups, which comes under the direction of the Cultural Affairs Branch; this program is concerned with the linguistic and cultural development of official language communities in areas where they are established as minorities.

Language Programs Branch. A series of programs devoted to the development of the official languages is administered by the Language Programs Branch. Its Federal-Provincial Program for Bilingualism in Education is intended to increase the opportunity for Canadians of the majority official language group in each province to acquire a knowledge of the other official language, and to increase the opportunity for Canadians of the minority official language group in each province to be educated in their own language. Financial aid is offered to the provinces on the basis of student enrolment, time spent in language instruction and costs per student. Provision is also made for various individual bursaries and awards, for contributions to language-training institutions and teachers' colleges and for special projects funded on a cost-shared basis. Assistance is given to provincial governments and municipalities, in agreement with provincial authorities, so they can offer services to the public in both official languages. Funds are also available for projects relating to language research.

In the private sector various programs have been developed to encourage the adoption of improved methods for acquiring and using both official languages. These include technical advice to business and industry, assistance to voluntary associations for interpretation and translation, and the dissemination of research results, documents and information on official languages. In collaboration with other appropriate departments, the Department of the Secretary of State co-operates with other countries and international organizations on problems relating to institutional and individual bilingualism.

Official Language Minority Groups Directorate. The Official Language Minority Groups Directorate was set up to assist the official language groups to make use of their language in ways that enable them to contribute their full potential to Canadian society in areas where they constitute minorities, promote their socio-cultural development and facilitate the harmonious co-operation of the two official language communities in furthering the national goals of the bilingualism development program.

The official language minority groups have several organizations in each province that relate to some facet or other of social, educational, cultural and economic life. Seven different Official Language Minority Groups Programs are designed to meet the needs of these organizations and their members, as long as the projects presented meet the objectives of the Official Language Minority Groups Directorate.

The Translation Bureau. The Translation Bureau provides translation and interpretation services in all languages as necessary for the proper functioning of Parliament, the government and its agencies, especially those services required for implementation of the official languages policy. In co-operation with Parliament, the government and its agencies it determines their translation, interpretation and terminology requirements, and arranges to meet them; it also provides simultaneous interpretation of the proceedings of the House of Commons, the Senate and parliamentary committees, and when government departments and agencies require them interpreters are sent to national and international conferences. The Translation Bureau also has the mandate to verify and standardize the use of both official languages in the public service; thus, it organizes and encourages

terminological projects in co-operation with specialized institutions in Canada and abroad, in order to establish a bank of equivalent terms, to keep abreast of current vocabulary in all disciplines and all relevant languages and to increase the efficiency of translation in the two official languages.

The Public Service Commission

The Public Service Commission is responsible for the determination of the level of second-language knowledge required of and possessed by candidates for bilingual positions in the federal public service, provision of language training for public servants, hearing of appeals against the results of language testing and language qualifications required in a competition, review of the language knowledge of employees to ensure retention of language skills and efficient implementation in departments of its official languages programs. Under an agreement with the Department of National Defence, the Public Service Commission is also responsible for the language training of Canada's military personnel.

The commission modified its language training system in 1973 by placing a greatly increased emphasis on continuous language training, in which the public servants concerned can spend up to 52 weeks at language school without interruption. This change of technique was brought about to increase the effectiveness of language training and also to ensure compatibility with the language requirements of positions. While its main training facilities are in Ottawa and Hull, the Public Service Commission also conducts regional language training operations in language schools in Halifax, Quebec City, Montreal, Winnipeg, Vancouver and Edmonton and makes language training available to federal public servants through contract arrangements in Saint John, Moncton, Fredericton, Toronto, Sudbury, North Bay, Regina and Banff. The commission also conducts various specialized courses to meet particular needs.

National Capital Commission

Federal departments and agencies in the National Capital Region are required to serve the public in both official languages. Moreover, in a constitutional conference in 1969 the first ministers of Canada and all 10 provinces agreed that "steps must be taken to assure that the two official languages... are recognized in these two cities (Ottawa-Hull) and in the National Capital Region in general, so that Canadians may have a feeling of pride and participation in and attachment to their Capital".

With the object of making the National Capital Region a true reflection of the country as a whole, a special program has been established under the aegis of the National Capital Commission (NCC) to encourage a balanced use of the official languages outside the federal public service. This program encourages and supports provincial and local government initiatives and the efforts of private bodies and individuals in the region.

Thus, the NCC seeks to develop shared-cost arrangements with the provinces of Ontario and Quebec with a view to ensuring that the linguistic and cultural values of the Anglophone and Francophone communities are adequately reflected in the region. It collaborates with regional and municipal governments and other local

public authorities such as school boards, as well as with private business organizations, voluntary associations and individuals, to encourage the use of both official languages in various services and activities.

Aside from assistance to organizations to permit them to offer services in both official languages, the NCC has been interested in youth programs, particularly home-to-home exchanges and immersion experiences that allow young people to acquire the linguistic skills and cultural insights that will make them better Canadians. The NCC also extends support to the Alliance for Bilingualism in the National Capital Area, an association that seeks to inform public opinion and stimulate discussion on such broad questions as education in both official languages, use of the official languages in provincial courts and social services to each community in its respective official language.

Commissioner of Official Languages

It is the duty of the Commissioner of Official Languages "to take all actions and measures within his authority with a view to ensuring recognition of the status of each of the official languages and compliance with the spirit and intent of this Act in the administration of the affairs of the institutions of the Parliament and Government of Canada and, for that purpose, to conduct and carry out investigations either on his own initiative or pursuant to any complaint made to him and to report and make recommendations with respect thereto as provided in this Act" (Section 25 of the Official Languages Act).

The commissioner exercises two functions, those of language ombudsman and linguistic auditor general in matters under federal jurisdiction, and reports each year directly to Parliament.

Within practical limits, the Official Languages Act permits everyone to address, in writing or orally, any department or agency of the federal government in English or French and to receive a response in the same language. Documents or publications printed by these departments or agencies for their publics must also appear in both languages. Parliament has provided the Commissioner of Official Languages as an ombudsman to back up these rights. Appointed by the House of Commons and the Senate for a seven-year term, the commissioner must investigate all complaints. If a department or agency of the federal government is found to have ignored someone's language rights the commissioner can and will make recommendations on that person's behalf. The law also requires that all such investigations be conducted in private.

Frequently, if a problem is outside the jurisdiction of the Commissioner of Official Languages, aid may be given in finding the appropriate door to knock on.

Multiculturalism

According to the 1971 Census, 44.6 per cent of Canada's population were of British origin, 28.7 per cent were French and the remaining 26.7 per cent were of other language origins. The government's multiculturalism policy, announced in October 1971, is a response to recommendations of the report of the Royal Commission on Bilingualism and Biculturalism, which described the status of all the various

cultures in Canada. The policy promised support to programs aimed at retaining, developing and sharing these cultures on a larger scale.

In November 1972 the position of Minister Responsible for Multiculturalism was created to administer the policy, and in May 1973 the Canadian Consultative Council on Multiculturalism (CCCM) was established to provide a focus for consultation by the minister on matters relating to implementation of multiculturalism policy. Regional, national and executive meetings have since been held regularly in order to review policy and evaluate multiculturalism programs. The CCCM sponsored the 2nd Canadian Conference on Multiculturalism in February 1976, at which various viewpoints on "Multiculturalism as State Policy" were discussed.

Multiculturalism Programs

Implementation of the government's multiculturalism policy is carried out by the Multiculturalism Directorate of the Department of the Secretary of State and by several federal cultural agencies.

One of the cultural agencies, the National Film Board (NFB), is producing a new series of films and multi-media materials on the history, culture and lifestyles of ethnocultural groups in Canada and on the inter-cultural relationship of various groups. The NFB also prepares and distributes ancestral-language versions of NFB films originally produced in English and French.

The National Museum of Man is actively involved in research, collection, preservation, interpretation and public presentation of various aspects of Canada's cultural heritage. It has accumulated a vast number of artifacts, tape recordings, video tapes and films reflecting elements of Canadian ethnocultural traditions. The museum also administers a related program of displays, travelling exhibits, educational kits and publications.

The National Ethnic Archives, a component of the Public Archives of Canada, collects, catalogues and preserves materials of historical significance relating to Canada's cultural minorities. It seeks to create a greater awareness among the many cultural communities of the importance of and need for documenting their heritage and preserving all types of archival materials in order to ensure that the many facets of Canadian history be fully recorded.

The Multilingual Biblioservice of the National Library administers a program to acquire and circulate books in languages other than English and French through the public library system.

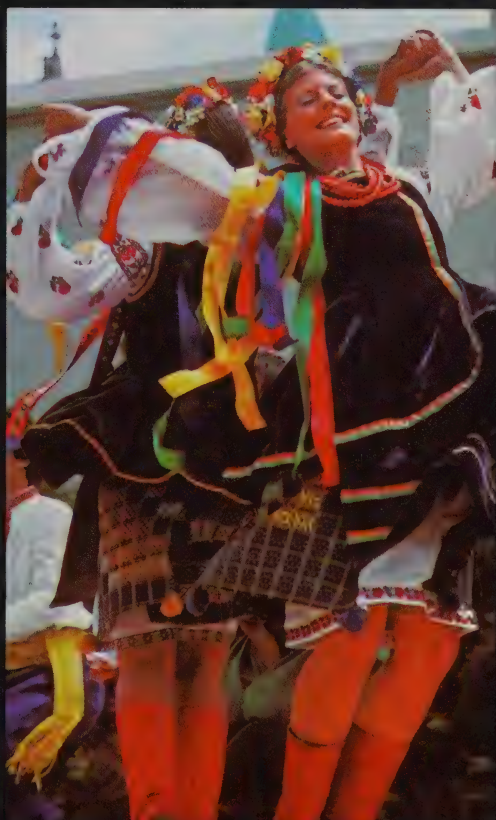
The Multiculturalism Directorate of the Department of the Secretary of State implements a number of programs, which include the following.

The Multicultural Studies Program involves several projects in Canada. It assists universities in obtaining visiting professors and lecturers to teach in areas related to multiculturalism and ethnic studies. Studies commissioned by the department on questions related to multiculturalism are monitored. The Ethnic History Project commissions the writing and publication of the history of ethnocultural minority groups. The Canadian Ethnic Studies Advisory Committee advises the department on questions related to multicultural studies.



1. Greek folk dancing by the Hellenic Society of Ottawa.
2. A solo performance of dances from India.
3. The Shimka Dancers of Edmonton performing Ukrainian folk dances.

1.



2. 3.

The Canadian Identities Program seeks to create an awareness of different lifestyles and traditions within Canadian society and promote inter-group understanding through activities such as theatre, folk arts, crafts, projects to improve inter-cultural communication and development of resource materials.

The Multiculturalism Directorate also provides financial assistance for the development and production of ancestral-language teaching aids and for a wide range of activities initiated by voluntary groups that enable these groups not only to maintain and develop their cultural heritage but to share it with others as well. By liaising through its national, regional and local offices with groups and organizations representing Canada's ethnocultural groups, the department continues to assist them to achieve full participation in society.

The Polish Combatants Association is one of the many community groups that combine efforts to raise money at Calgary's Charity Bazaar.



Religion

Religion has been an important influence in Canada's history since the earliest days of discovery. Not just the search for riches or the lure of exploration, but a sense of mission, to Christianize the Indians, drew Frenchmen to the New World. Later settlers, both French- and English-speaking, looked to their churches as centres of social stability, of community as well as religious activities, and of the consolations of faith in the face of adversities, sufferings and despair. The institutional church still provides leadership and guidelines for living to many Canadians, and most would agree that the Judaeo-Christian values carried from Europe influence their national life.

Although French Protestants were active in the early fur trade of New France, religious and economic rivalries led to the banning of all but French Roman Catholics from the colony in 1627. Before the settlers had arrived in any numbers, however, the Roman Catholic Church was already operating schools and hospitals as part of its great missionary effort to convert the Indians. One of the most heroic stories in Canada's past is that of the 17th century mission to the Hurons on Georgian Bay, where Fathers Jean de Brébeuf and Gabriel Lalemant died at the hands of the Iroquois. Five other Jesuits killed in the course of their mission to the Hurons have also been recognized as martyr saints. From similar missionary enterprise in that century grew the great city of Montreal.

When the British acquired Acadia in 1713 and New France in 1763, the new rulers guaranteed to the Roman Catholic population freedom to practise their religion. A policy encouraging a "Canadian" Catholic Church was confirmed by the Quebec Act of 1774, which gave official recognition to that church. This pattern of religious unity inherited from New France was, however, soon altered by the predominantly Protestant Loyalists. Their arrival meant that from that time forward Canada would be religiously pluralistic. This religious diversity and the growing spirit of equality eventually doomed to failure the post-revolutionary plan to make Anglicanism the official religion of the colonies; vast land endowments and special political and legal privileges for the Church of England had all disappeared before Confederation as voluntarism—the separation of church and state—became the unwritten law and universal practice in Canada.

Canadians have come literally from a hundred nations, and their different faiths are now represented in this country of their adoption. The larger churches have established "ethnic" parishes where the temporary use of their mother tongue helps ease the immigrants' entrance into Canadian culture, but in ethnic churches such as the Eastern Orthodox community, where the mother language is an essential part of religious services, the cultural transfer from the Old World to the New is sometimes more lengthy and difficult. Historically the churches of England and Scotland too could be considered ethnic churches, but in Canada they have had the advantage of using one of the two "charter" languages.

While the great majority of Canadians are Christian by heritage, and in times past have often referred to Canada as a "Christian nation", other faiths are also represented in the religious mosaic of the country. European Jews have brought both the major Judaic religious traditions with them and are organized here in orthodox,



Of the many groups that have settled in close communities in Canada to preserve their religious and folk ways, the Mennonites of southwestern Ontario were among the earliest arrivals.

conservative and liberal synagogues. Judaism in Canada has remained essentially an urban phenomenon, with 77 per cent of its followers living in Montreal and Toronto alone. Since the 1940s the Canadian Council of Christians and Jews has worked for greater understanding between these two faiths and promoted civil rights and the end of religious prejudice through education. From Asia recent immigrants have introduced Islam, Hinduism, Buddhism and Sikhism, and one of Christianity's oldest branches, the Coptic Church of Ethiopia, now has a congregation in Toronto.

Soon after Confederation nationalists like George M. Grant, principal of Queen's University, voiced their dream of reuniting all Christians in a single Canadian church. Their ideal of Protestant-Catholic reunion seemed an impossibility until Vatican II, but in the intervening century Canadian Protestant denominations did take long strides toward church union. In 1875 all Presbyterian bodies in Canada were joined into a single church, and nine years later all Methodist groups were similarly reunited. These denominational unions led immediately to discussion of an interdenominational union of Anglicans, Methodists, Presbyterians, Congregationalists and Baptists. Not until 1925, however, and then only after bitter controversy had divided the Presbyterian Church, was a United Church achieved; it included Methodists, Presbyterians and Congregationalists only.

The United Church of Canada, a unique experiment in interdenominationalism and Canada's largest Protestant denomination, has recently merged with the smaller Evangelical United Brethren. From 1944 to 1975 it discussed a union with the Anglican Church and the Disciples of Christ, which would have contained nearly 30 per cent of Canada's population. According to the 1971 Census, Roman Catholics make up 46 per cent of the population and the three next largest denominations—Presbyterians, Lutherans and Baptists—claim another 12 per cent of the population. Nearly nine of every 10 Canadians are members of just five churches—the remainder are divided among more than 30 other denominations,



Abandoned church at Bennet Lake, BC.



Presbyterian church at Mahone Bay, NS.

sects and cults. While the Canadian religious scene is often called pluralistic, there has in fact been an historical trend toward fewer and bigger “mainline” churches.

Members of Canada’s larger churches—Roman Catholic, United and Anglican—are found in every province, but the smaller denominations often reflect a regional concentration that stems from the pattern of settlement or from particular religious events in Canada’s history. The Presbyterian Church in Canada is predominantly an urban and Ontario institution because of the schism caused by the union of 1925. Canadian Baptists number only 667,000 and are mainly in the Maritimes, where they separated from the Congregationalists as a result of an 18th century religious revival. Over the past two centuries Canada’s tradition of religious freedom has attracted many small religious bodies that have suffered persecution in other lands. These have often settled here in close communities to preserve their religious and folk ways. Among the earliest of such groups were the Quakers,



The Roman Catholic basilica in Ottawa, Ont.

Mennonites, Tunkers and Moravians; more recent arrivals are the German-speaking Hutterites and the Doukhobors from Russia.

During the 19th century rapid and widely dispersed settlement absorbed most of the resources of the churches as they tried to reach these scattered flocks. Where the Catholic Church had earlier provided schools, hospitals, orphanages and asylums in the more compact settlement of New France it was now left to the state to develop such social agencies in the rest of Canada, so that the work of the churches, particularly the Protestant churches, was largely limited to providing exclusively religious help.

Despite this growth of the welfare state and its separation from the churches, Canadians have always believed that religion and secular life are necessarily connected. The organized churches have acted as the conscience of the state and have lobbied with some success on such issues as temperance, Sunday observance, birth control, abortion, working and living conditions, capital punishment and criminal law reform. They have also attempted to influence Canada's external relations in connection with aid to under-developed countries and the non-recognition of certain foreign governments. In Quebec the Roman Catholic Church continued to play an important role in politics until the 1960s, whereas the Protestant churches were strongest as social critics in the generation of mass immigration and industrialization immediately before World War I.

Since the early 1960s the relative decline in the influence of the older churches on national life has been complemented by the rise of various sects and cults whose radical beliefs and practices seem to have attracted a sizable following among a restless younger generation. The more traditional forms of religion may yet regain some of their former effectiveness thanks to the revival of religious conservatism that has recently appeared in the United States and Canada in reaction against the uncertainties, confusion and challenges of the previous decade.

JOHN S. MOIR

Arts and Culture

The Arts: Boom-time Problems

There is much more money available for the arts than ever before, and the arts generate money for individuals and for communities. At the same time, everyone in the arts has money problems; some are merely hard-pressed, while others are well below the poverty line. More money has meant more and better arts for more people in more places, but it has also meant more arts people worrying about where the next dollar is coming from.

The bigger the arts get, the more worries there are about Canadian content and about training the next generation of artists. The Canada Council alone has commissioned a whole raft of studies on training in the various performing arts. The release of part of the first one, the Brinson report on the dance in Canada, has triggered loud controversy in that art form; in light of the response to it the word "report" might well be understood as meaning what one hears when a gun goes off. Other, bigger reports are yet to come in music, theatre and probably opera.

The question of Canadian content is still more controversial. One can read about it in Hansard and in the editorial pages of newspapers, as well as in the arts pages. It is like all great problems, in that the more people work on it the more they discover has to be done.

As the arts have grown in size their reputation has spread and improved. The 68 biggest arts groups in Canada attracted a full third of our population to spend money and time on attendance. Millions more are attracted to other arts events, or read Canadian books, or look at works of art. Press coverage has expanded to the point where one sees long stories in the newspapers about conferences whose sole aim is to discuss what is wrong about arts reporting in the newspapers.

At the same time, more artists feel that they are not known and not appreciated. Canadian playwrights, composers, painters, sculptors and authors all have good reason to feel that they are neglected by the press and public. Even superstars such as Michel Tremblay, Margaret Atwood, Jean Duceppe and Gordon Lightfoot draw a tiny fraction of the printer's ink that is given freely to various Hollywood celebrities. Other artists, good ones, feel as though the work they produce just disappears into a vacuum, that there is no public reaction at all.

Everybody's Doing It. One consolation for artists is that the arts are literally everywhere. If there were no "serious" visual art there would be no commercial art and, as pop artists and many others have shown, the line between the two can be very thin and at times visible. Music piped into a factory or office is art and so is all the music on radio and TV. Without dramatic art and fiction there could be no TV adventure serials or soap operas, nor even "True Confession" magazines. Schoolbooks and visual aids that were not informed by skills learned from literature and the visual arts would communicate little.

People who say they have never been artists are almost always wrong. What children do with finger paints is art and so is the shaking of tambourines or the banging of triangles. On a more elevated level are amateur groups of all kinds; what

one sees or hears in a church basement or school hall is as surely art as a performance at one of Canada's great arts centres. Every newspaper editor in Canada knows that to ignore the hundreds of amateur arts events in the area is to miss some good performances, as well as to lose good will and circulation.

It is impossible even to make an absolute distinction between artists and the people who appreciate their work. Artists are appreciators as well as creators. Any critic may be wrong about who influenced what artist, but certainly Margaret Engel read and liked novels before she started writing them and Gilles Vigneault listened to songs before putting his own into words and music. Appreciating a work of art is a creative act approximating that of the artist who created it.

Excellence in the arts still counts for a great deal. Some artists are better than others and a few are much, much better; the problem is that in some fields one cannot be sure for many years after the event and, even then, not that sure. We know who is good at playing the cello, for example, and the grimace on the face of anyone with what musicians call an "ear" will indicate who is bad, but 20 years from now we may have different ideas about who is great. Fashions change even in such things as musical performance, and when it comes to composers, writers and other creative artists history will undoubtedly have a lot of easy laughs at today's judgments.

Still, quality counts for a lot. These days, thousands of Canadians are involved full-time in the practice of the arts at a very high level. In general these are the people and groups who qualify for Canada Council grants, but there are also many who fall outside the net of the council. They provide new insights that affect every Canadian in one way or another. Their successes are our successes and their problems concern all of us.

Life completely cut off from the arts would be unliveable. What is more, it would be almost impossible to bring about, even in the deliberately repressive confines of a concentration camp; inmates often spin tales and sing songs and dream of pleasing shapes and colours. Rather than repress art, our society has deliberately encouraged it in all its forms—which brings up the question of money.

Good Times for Artists. In a speech in the spring of 1977, André Fortier, Under-Secretary of State in charge of cultural affairs and former Director of the Canada Council, let drop some figures that made visions of sugar plums dance before the eyes of artists in the audience.

One figure he divulged was \$150 million. That is the amount of federal government support to the arts, not counting the Canadian Broadcasting Corporation (CBC).

But that is only part of the story. There are other governments in Canada that help the arts. Provinces and municipalities contribute still another \$150 million.

A lot can be done with that kind of money. If it were simply divided among the 1,000 best artists in the country each individual would get \$300,000 per year, with small annual increases. Listeners to Mr. Fortier's speech may have had visions of wild opulence. They may have thought of the film, *The Producers*, in which Zero Mostel did a lyrical dance number on the genial theme not of love, but of money.

Even that is not the whole story. There are private contributions as well. Individuals buy more books and more tickets for concerts and plays, see more movies and make more donations to the arts in Canada than ever before.



In November 1976 a conference at the Royal York Hotel in Toronto showed how business is getting down to the business of helping the arts. What brought 100 key executives together on this occasion was not maximizing profits, but "Corporate Donations to the Arts". It was organized by *The Financial Post* and The Council for Business and the Arts in Canada, which already has 100 corporate subscribers and is still growing. Xerox rubbed shoulders with IBM and Olivetti, banks with insurance companies, Maclean-Hunter with Air Canada.

No doubt more corporations will join the ranks of hero-workers in the arts. Rothman's has its own Council for the Performing Arts; Toronto-Dominion Bank concentrates on Inuit art; Noranda Mining has a fine art collection; and Seagrams sends art exhibitions around the country. Metropolitan Life helped pay for a stunning 1976 production of Tchaikovsky's opera, *The Queen of Spades*, at the National Arts Centre in Ottawa. In Edmonton, small and large businesses alike dipped deep into their pockets to pay the entire cost of the Citadel Theatre's new building.

Even a business person who has no interest in "Art" cannot help thinking about the arts these days. The arts are competing with Dun and Bradstreet and grain futures for space in the business pages of the dailies and the financial weeklies. Even the most determined miser has more than a passing interest in articles about millions being made by the movie and book industries; a conglomerate takes over a multinational publisher or the author of a best-seller becomes a corporate conglomerate herself and, whatever he feels about esthetics, the miser wants in.

Even the visual artists, the traditional hard-to-handle kids on the block, have their own bank, if not the usual kind of bank. The Canada Council's Art Bank has put purchase money into the pockets of more than 600 artists and some of their dealers by buying works of art to loan to government departments for their offices and public spaces, and it is now sending works from the collection out on tours of the country.

Artists have some of the other trappings of big business and big labour. They have a number of lobbying groups, including the Canadian Conference of the Arts, which holds meetings between artists and government people in an attempt to get a better deal for the arts. Among the lobby groups for specific segments of the arts community, the Association of Canadian Orchestras has been particularly active in encouraging write-in campaigns to Members of Parliament; it is generally one of the most vigorous and effective arts associations in Canada.

Strong unions are well established in the performing arts and new unions of visual artists and writers have helped give them collective voices. The AFM (American Federation of Musicians), ACTRA (Association of Canadian Television and Radio Artists) and the Union des Artistes, among other unions and professional associations, have helped give artists in these fields a strong say in their own affairs. Joining them in recent years have been the increasingly active Writer's Union of Canada and, on behalf of the visual artists, Canadian Artists Representation. The Writers' Branch of ACTRA has come to play an increasingly important role in its own affairs, an important move for the many novelists, poets and playwrights who count on broadcasting and film for good portions of their incomes.

Noon-day concerts at the Glenbow-Alberta Institute in Calgary are free to the public.





The Mariposa Festival, held each year near Toronto, draws appreciative crowds of music-lovers.

Bad Times for Artists. Money problems in the arts are not always like other money problems. "Poverty amidst plenty" is a phrase that usually suggests such classic situations as tar-paper shacks huddling amidst the mansions of the rich, but in the arts the loudest cries of distress are coming from the mansions.

Every large theatre, opera or dance company, symphony orchestra and performing arts festival has grave money worries. In the fiscal year 1976-77 the Canada Council gave grant increases of only 7 per cent, and the following year the increases were stopped altogether for some companies and amounted to no more than 7 per cent for the particularly troubled few; because of inflation, this meant serious cutbacks in their operations.

It is a situation that could happen only in the arts. The large companies and orchestras are packing in more paying attendance than ever before; they are turning out a better product, making better use of Canadian talent and moving more effectively out into the communities they serve. In other businesses, such success would be a signal for expansion.

However, the performing arts at the highest level have rarely been able to survive without patronage of one kind or another. It used to be the great noble houses of Europe, and then the great financiers, and now it is government that pays a large part of the bill. There are some exceptions, but the places where purely commercial theatre at a high level works are few and far between. Concerts by small groups of musicians can make a profit—most notable in rock or folk music, but also in the

cases of great soloists such as Maureen Forrester or Jon Vickers. But the expenses of bringing together large numbers of artists in good productions are simply more than the limited seating capacity of theatres or concert houses can support.

The only organizations to receive more than the inflation rate were some of the smaller ones that needed their 10-to-15 per cent increases just to hold their heads above water. That the Canada Council had too little money to do more was no consolation. Still other smaller organizations that give new opportunities to creative and performing artists have also been clamouring for attention and the council had to use some of its relatively small increase in funds—to \$37.5 million in the year 1977-78 from \$36 million the year before—to look after them.

The money worries of individual artists in all fields are not very different than those faced by most Canadians at one time or another. Most artists do not earn enough from their work and often have to enter into makeshift arrangements to make ends meet. For them it is usually a question of keeping the wolf away from the door, rather than "keeping up with the Joneses"; the Joneses can be expected to have well over average incomes and artists in all fields usually earn less than the average.

It would be difficult to imagine a less financially rewarding profession than the performing arts. A study commissioned by the Canada Council showed that in 1971 professional musicians did best among performing artists, with average yearly earnings of \$7,500, and dance professionals the worst, at \$4,500. The average income in all performing arts was \$6,500, \$400 a year less than that of the labour force as a whole and grossly less than the income of other professionals. The artists surveyed were professionals who had undergone not only many hard years of basic training, but also an average of two or three years of "apprenticeship" in their fields; their average age was 34. At all times competition was very hard, and the professionals were the pick of what began as a very large crop. Each field has its own hazards. Dancers in particular last only about as long as professional athletes and risk career-ending injuries at every stage.

Things are much worse for poets, playwrights, novelists, composers, painters and sculptors. In most cases they have no large institutions to pay them salaries and bring their work before the public. Grants from the Canada Council and other arts councils have been a great help for many of them, but still do not save them from either living at levels below the poverty line or taking time-consuming outside jobs. Artists in these fields live in perpetual uncertainty. Even the most respected of novelists, for example, are only as good as their next works. A composer can go through a productive creative life of many years without hearing one of his or her works properly performed. Here again the competition is intense, the apprenticeship painful and the financial rewards usually meagre.

The Situation Is Excellent. For all the problems, the arts are springing up everywhere. Creative artists are producing more than ever before and small performing arts groups across the country are finding new ways of illuminating the dark corners of our collective life. Energetic solutions to problems are being put forward in all art forms and the reaction to difficulties is not despair but the kind of irritation that leads to getting things done.

Most important, the artists, governments and public now see the arts in Canada as something delightful and absolutely essential to the good life.



Backstage at the National Arts Centre.

Highlights and Trends

Theatre. Theatre in Canada is moving out in many new directions despite a financial squeeze that is particularly hard on the biggest companies.

More professional groups are turning to theatre for young people. Most use only Canadian plays, many written locally or created collectively by members of the company. Marmaille, a Montreal-based group, develops its plays at workshops in the schools; the subject of the play is what they discover the students really care about. Other small groups are bringing young people's theatre on tour in various regions; Kaleidoscope, based in Victoria, BC, features collective creations, and Carrousel and Strings and Things, both Vancouver-based, do musicals and hold workshops in the schools. The Young People's Theatre of Toronto has reached a very high level of professionalism. It brings productions on tour and has acquired fine new quarters—what arts people now call a “space”, rather than a “theatre” or “gallery”—in a refinished warehouse.

The Canadian playwright gets more star billing with each passing year. Three large companies in western Canada have commissioned plays from local playwrights for the 1977-78 season: Edmonton's Citadel, from Sharon Pollock; The Bastion, Victoria, from Ron Chudleigh; and Regina's Globe, from Rex Deverell. A commissioned play by Timothy Findlay will be one of the highlights of Theatre London's 1978-79 season, marking their move into a long-awaited theatre.

Michel Tremblay has decided that *Damn  Manon*, *Sacree Sandra* will mark the end of his first cycle of plays. Its production at home and on tour by the Th   tre de Quat'Sous of Montreal was regarded by many as the high point of Canadian theatre in the 1976-77 season. Tremblay's work has made a profound mark in both French-

language and English-language theatre. Some of his plays have been translated and produced and also appear on the required-reading lists of many university classes.

The Montreal company *Voyagement* is built around the plays of Michel Garneau, his latest being *Adidou Adidouce*. With *Medium Saignant*, by the seasoned writer Françoise Loranger, the Compagnie Jean Duceppe of Montreal packed the hall with paying customers and the arts pages of local newspapers with controversy.

The big news among small companies comes from Newfoundland, where the famous Codco is springing back into life after a brief retirement. This is the small group that had them laughing in Ottawa, Philadelphia, Toronto and many other unlikely places, as well as in the halls of St. John's, Nfld. The Mummerys of Newfoundland continue to direct their unique skills at dramatizing local history or current social problems.

Each of the small companies—and there are 30 in Quebec alone—has a unique contribution to make. Parminou, based in the Bois Franc area some 80 km (kilometres) southeast of Montreal, is a travelling company of 10 in which all the members take turns playing all the different roles, on and off stage; the hero or heroine of one day may be the ticket-taker of the next. As in all things Canadian, geography has to be reckoned with by the small new theatres. The Caravan Stage Company, based in Kelowna, tours a different region of the interior of British Columbia each May-to-October season; in a province with three magnificent mountain ranges, it makes its touring schedule with natural obstacles in mind. In the relatively level ground of Ontario, on the other hand, the Kaministiquia Theatre Lab, based not far from Thunder Bay, is able to cover smaller communities and settlements in the whole north of the province.

Some of the best known actors of Quebec have been enrolled by Jean-Pierre Ronfard in the Théâtre Expérimental de Montréal. People such as Luce Guilbeault and Monique Mercure are able to work together at probing new techniques. They are showing the theatre community what new directions the theatre might best take in the future.

Dance. The dance events of the cultural program at the 1976 Olympics were a great success. A good number of the smaller experimental companies not only played to packed halls, but also had the opportunity, rare in this large country of ours, to see each other at work and compare notes.

In 1976 and 1977, perhaps as a result of the Olympic spirit, a number of smaller companies began for the first time to actively co-operate with each other.

Dance companies always have a strong sense of their uniqueness. Nonetheless, one of the highlights of 1976 was the Toronto Dance Festival, in which performances were given by the Toronto Dance Theatre and other local groups. It was one of a number of occasions in which smaller companies played host to their counterparts, either local or from other regions. Among such host companies were Regina Modern Dance Works, Tournesol of Edmonton and Nouvelle Aire of Montreal.

The chamber ballet company Entre-Six of Montreal was invited to New York in the fall of 1976, where it played to full houses and good reviews. The experience was so invigorating on all sides that a number of small Canadian chamber companies are expected to make the trek southwards in the 1977-78 season.



The chamber ballet company *Entre-Six* in a performance of *Esquisses*.

A number of "free-lance" choreographers have been setting up shop in various parts of the country. They include Anna Blewchamp, Danny Grossman, Judy Marcuse and Linda Rabin. Typically, they gather a few dancers around them and produce only their own original productions. In a country whose rich tradition of dance has been troubled by a shortage of good choreographers, this gives great promise for the future.

Despite the financial squeeze there were some happy tidings from all three of the big ballet companies. The Royal Winnipeg Ballet gave its premiere performance of Araiz's *Rite of Spring* in Washington, where it was invited to perform in honour of the US Bicentennial, while Sylvie Kinal Chevalier of the Grands Ballets Canadiens won the silver medal at the 1976 International Competition held at Varna, Bulgaria.

The 25th anniversary of the National Ballet of Canada was marked by celebrations and honours. In November 1976 the company was host to a seminar that brought together many of the most illustrious people in dance from across the world to discuss "Ballet: Classical and Contemporary—The Next 25 Years". The productions it staged during 1976 ranged from Sir Frederick Ashton's *La Fille Mal Gardée*—the first time it has entered the repertory of a North American company—to original creations from the young choreographers attached to the company. The honours of various kinds gathered by the company and its dancers during the year are far too numerous to list. For example, Karen Kain alone: received the Order of Canada; was awarded an honorary degree by York University; was, with Frank Augustyn (also of the National Ballet), one of the first North American dancers invited to perform at the Bolshoi; starred in Roland Petit's *Nana*, a role specially created for her; starred when Petit's company toured Canada in the

fall of 1976, the first time a visiting company has brought one of our own dancers home as the star; was the subject of a one-hour special CBC-TV program in April 1977.

Music and Opera. For the first time Canada is within reach of having a network in opera that can bring young professionals through the difficult early stages of their careers and then offer them some opportunities for full-time employment.

Although many Canadians have achieved renown in opera, they have had to overcome great obstacles during the early part of their careers. Typically, our singers have to go abroad for further training after university. But foreign schools or residency programs naturally give preference to their own nationals, and for many young Canadians this means returning home not much further advanced in their training or careers than they were when they left. Lacking experience, they are often unable to obtain assignments with established Canadian companies because there is not enough time to bring them to the professional level of the more experienced members of the cast.

Beginning in 1977, a new enterprise began to fill this gap when the Kitchener-Waterloo Symphony Orchestra inaugurated an opera studio, or residency program, under the professional direction of Jacqueline Richard and Rafi Arminian. The students are young singers who have already had some experience on the concert stage or in minor opera roles. Over a 20-week period they learn all kinds of roles and perform in public with a professional orchestra.

The strengthening of Opera West means more opportunities for Canadian singers. This development marks a high degree of co-operation between the opera companies of Vancouver, Edmonton, Calgary and Winnipeg, through which they mount co-productions, work out mutual problems and work together in a number of other ways. The result is more and better productions in their areas at lower cost.

The Canadian Opera Company can now offer a full year's employment to Canadian singers for the first time. It has fall and spring seasons each year at home in Toronto, followed by four major tours.

The initiative of the Kitchener-Waterloo Symphony in opera is only one sign of the vitality of Canadian symphony orchestras. All of them offer a great deal extra to the communities they serve, apart from their regular concert seasons. For example, the Calgary Philharmonic and the Hamilton Philharmonic both send their players out to well over 300 school concerts a year. The Atlantic Symphony Orchestra serves many communities in the Atlantic provinces and the Quebec Symphony Orchestra does the same for many smaller centres in its region.

Some measure of the interest in music in all parts of the country can be taken by the number of amateur choirs that have reached high levels of excellence in recent years (more than 50 earn Canada Council grants each year) and the strong response to the Canada Council's new Community Musician Program, in which one or more professional musicians put their skills at the service of a smaller community.

One of the hazards of the trade for jazz, folk, rock, country and pop musicians is having to listen to people who think that theirs is an easy way to get rich quickly; like other artists, these musicians normally serve long, hard apprenticeships filled with uncertainties. What has greatly improved in the 1970s is the opportunity for Canadian musicians and composers to get fair exposure on the radio stations. In 1971 the CRTC (Canadian Radio-television and Telecommunications Commission) established Canadian content regulations for AM radio stations that have proven to

be an unqualified success. Many stations now carry more than the required 30 per cent Canadian material and some country and western stations go as high as 50 per cent. Hard statistics showing what this has meant to performers are not available, but the writers and composers who are members of CAPAC (Composers, Authors and Publishers Association of Canada) saw their total radio royalties increase fourfold from the \$364,000 earned in 1968 to \$1,510,000 in 1975.

Publishing. Assistance given to publishers and periodicals is assistance given to writers. It leads to more royalties for them and a wider audience for their work.

Canadian publishers have begun to co-operate in a number of ventures that will help them sell more books at lower cost. Most of the projects were begun with Canada Council grants, but the publishers expect to become completely self-sufficient after this initial encouragement.



Canada Books intends to sell more books on the lucrative educational marketplace. This organization, administered by the Association of Canadian Publishers (ACP), puts together catalogues and sales promotion materials on behalf of a large number of publishers. Until recently educators made most of their purchases from foreign publishers; Canada Books makes it easier for them to buy the Canadian product.

Basic Books is an up-to-date catalogue of Canadian books in print that is administered by the Canadian Booksellers Association. It means more royalties for authors and more sales of backlist titles for publishers, and at the same time helps booksellers meet the needs of their customers.

The ACP administers the Book Information Centre, which sees to it that Canadian books get good displays at book stores, libraries, conventions and other places where buyers might be influenced. It operates its own van for mobile displays.

Still in the planning stage are a joint warehouse facility for all English-language Canadian publishers and a joint catalogue for the Literary Presses, smaller houses that publish mostly poetry, fiction, plays and criticism.

All French-language Canadian publishers profit from the work of the Société de promotion du livre in Montreal. Its director, Jacques Thériault, sends out a book page for free publication in the weekly papers and tapes on literary matters for free broadcast on radio stations. The Association des éditeurs canadiens has received Canada Council money to purchase advertising space regularly in all major French-language daily papers. On a grander scale, Quebec is the home of both the Salon international du livre de Québec and the Foire internationale du livre de Montréal, at which books are promoted and literature exalted.

Other projects are aimed directly at helping authors. The greatest breakthrough is the proposed Compensation for Authors, through which authors would receive a fee for library use of their works. The project was approved in principle by the Canadian Library Association at its June 1976 meeting in Halifax.

Not only are there more literary prizes in Canada than ever before, but many of the more important ones are now worth twice as much money. In 1976 the value of many of the prizes administered by the Canada Council was boosted to \$5,000, including the six Governor General's Awards and the new prizes for children's literature and translation.

Film. The first thing to know about film-making in Canada is that the pocket calculator is generally more in demand than the hand-held camera.

There is money to be made in films. Theatrical box-office receipts for films in the US jumped to over \$2 billion in 1976, not including the great sums received for TV showings.

But things are different in Canada. The unemployment rate for experienced film-makers is said to run at 90 per cent, and that makes the chances for newcomers almost non-existent. Canadians, whether as movie-goers or as critics and investors, tend not to support Canadian films. Fortunately, this does not mean that nothing is happening in the field of Canadian feature films and non-sponsored short films.

The relatively new Festivals Bureau of the Secretary of State's Department is making a strong play for better international distribution of Canadian films, particularly at Cannes and the other big film festivals.



Monique Mercure with Marcel Sabourin in a scene from the film *J.A. Martin, Photographe*; this performance won her the Palme d'Or for best actress at the 1977 Cannes Festival.

Canada has done well at Cannes in recent years. In 1975 Michel Brault's film, *Les ordres*, won the award for best direction and in 1976 Barry Greenwald's *Metamorphoses* was named the best short film. Two 1976 films that were among the biggest commercial successes at Cannes were David Cronenberg's *Shivers* and Bill Fruet's *Death Weekend*. There was an imposing list of Canadian entries at Cannes in 1977, many of them co-productions with other countries. For the first time there were two Canadian entries in the main competition, Jean-Pierre Lefebvre's *Le vieux pays où Rimbaud est mort*, a Franco-Canadian co-production, and Jean Beaudin's *J.A. Martin, Photographe*; Monique Mercure won the Palme d'Or for best actress with her starring performance in the latter film. In other events were the National Film Board's (NFB) *One Man*, directed by Robin Spry, Silvio Narizzano's *Why Shoot the Teacher?* (Anglo-Canadian) and Paul Leduc's *Ethnocide* (Mexican-Canadian).

Co-productions have been the dominant trend in feature film-making in Canada over the past two years. Recent co-productions with Great Britain alone include: *Ragtime Summer*, shot mostly in the Kawartha region north of Toronto; *The Disappearance*, with Donald Sutherland and Francine Racette; and *Leopard in the Snow*, undertaken by the Canadian paperback book publisher, Harlequin Books. Not everyone is happy with the predominance of co-productions. They do provide good jobs for Canadian technical people, but they also often rely on outsiders for the creative jobs and the best acting roles, and they tend to attract the better part of what private Canadian investment money is available for films.

Nonetheless, as this was being written a number of exciting projects by Canadian creators were at one stage or another of the long road that leads to the local movie house. Don Shebib (*Going Down the Road*) was at work on a new script, Bill Fruet

(*Wedding in White*) was putting the finishing touches on the script he planned to call *The Dodo Bird*, Gilles Carle had begun work on his new film, *Extra*, with Carole Laure, and writers Margaret Atwood and Graeme Gibson were at work on a project to be filmed by Judy Steed and visual artist Joyce Weiland.

There are quite a few ways in which the federal government gives valuable assistance to the film industry in Canada. Without the NFB and the Canadian Film Development Corporation (CFDC), it is difficult to see how a film industry worth supporting could have developed at all. The Canada Council, the CBC and the Public Archives of Canada all help film-makers in their various ways. A change in the tax laws has extended the recently enacted 100-per-cent capital cost allowance for investment in Canadian feature films to short films as well. An agreement by the two biggest movie-house chains, Odeon and Famous Players, to include four weeks of Canadian films a year in their programs is being watched by the Secretary of State's Department. The NFB is moving to strengthen its regional production centres

Paintings by Lawren Harris at the Kleinburg Museum in Ontario.



and its assistance to private film-makers and the CFDC continues to draw up co-production agreements with other countries.

Visual Arts. A few years ago hardly anyone would have known what the term "parallel galleries" meant. These days they are still difficult to define, but are nonetheless the most striking new development in the visual arts in Canada. They may present poetry readings, dance and mixed media presentations, as well as the visual arts in all forms. They operate in storefronts or other unorthodox spaces and are usually centred around a group of local artists. They seem to have sprung up in haphazard fashion in cities across the country, but they do have a sharp and lively focus in two magazines—*Parachute*, published in Montreal, and *File*, in Toronto.

Canada is pre-eminent in parallel galleries, partly because of the liberal funding policies of the Canada Council. In the summer of 1977, 12 galleries showed their wares and staged performances at the Bologna Art Fair in Italy as honoured guests selected by its director, Arturo Schwartz, during a cross-Canada tour.

The death of the painter Jack Bush in 1977 came at a time when his influence on young Toronto painters was very strong. The important display of contemporary Canadian painters held at the Hirshorn Museum in Washington that spring included work by him and by painters he had influenced.

Also in 1977 a highly successful show of Canadian photographs mounted by Optica, a parallel gallery in Montreal, went on a tour of major European galleries, while Geoffrey James put together a fascinating display on the artist's use of photography, entitled "Transparent Things", for the National Film Board. Signs of a revival of interest in old Canadian photographs are the nation-wide tour of Vanderpant's pictures of Vancouver in the 1930s and an exhibition of pictures of pioneering days in the West at the Photographers Gallery in Saskatoon.

The eerie three-dimensional art of holography is receiving attention from artists in the larger cities and a number of Canadians are represented in the collection of the Museum of Holography, New York, the only institution of its kind in the world.

How to Find Out More

There are many sources of information on current developments in the arts to fill out this sketchy summary. The arts pages of the newspapers continue to get bigger and better; in the larger towns and cities they can be counted on to give informed opinions on what is happening locally and, to some degree, nationally. Annual reports of the Canada Council and the arts funding agencies of some of the provinces and cities can often be found in the reference section of the local library.

Among the many Canadian arts periodicals are:

Performing Arts: *Canadian Theatre Review*; *Coda*; *Dance in Canada*; *Opera Canada*; *Performing Arts in Canada*; and *That's Show Business*.

Writing and Publishing: *Books in Canada*; *Livres et Auteurs Québécois*; and *Quill and Quire*.

Film: *Cinema Canada*; *Cinema Quebec*; *Motion*; *Sequences*; and *Take One*.

Visual Arts: *Art Magazine*; *artscanada*; *Impressions*; *File*; *Ove Photo*; *Parachute*; and *Vie des Arts*.

Museums and Galleries

During the last decade, Canada has witnessed a dramatic increase in museum activity. Since 1972 extensive financial support for galleries, museums and museum programs has flowed from all levels of government, in keeping with growing public interest in the preservation of Canada's natural, historic and artistic heritage.

Since 1965 the number of museums in Canada has almost doubled, so that there are now about 1,300 in operation. The number of museum workers has also increased enormously and training programs in museology have expanded as a result of initiatives taken by major institutions, national and provincial associations and universities and colleges.

The four national museums are located in Ottawa: the National Museum of Natural Sciences; the National Museum of Man, which includes the Canadian War Museum; the National Gallery of Canada; and the National Museum of Science and Technology, which includes the National Aeronautical Collection. Other major institutions in the country include the provincial museums of Alberta and British Columbia, the Art Gallery of Greater Victoria, the Vancouver Art Gallery, the Glenbow-Alberta Institute in Calgary, the Western Development Museum in Saskatoon, the Winnipeg Art Gallery and the Manitoba Museum of Man and Nature in Winnipeg, the Art Gallery of Ontario and the Royal Ontario Museum in Toronto, the Montreal Museum of Fine Arts, and the Nova Scotia Museum in Halifax. As a result of the National Museum Policy set forth in 1972, 25 of these museums are drawn together as partners in a nation-wide network of Associate Museums and they receive specially allocated federal funds to encourage programs of extension and travelling exhibitions. Attendance at the 25 Associate Museums in 1976 was about 10 million visitors. The vast majority of Canada's 1,300 museums, however, are community institutions reflecting the history of man and nature in their immediate areas and art galleries responding to local needs.

A significant contribution to Canada's museum scene has also been made by major outdoor museum complexes, such as the restored and recreated gold rush town of Barkerville in British Columbia, Heritage Park in Alberta, Upper Canada Village and Black Creek Village in Ontario, Kings Landing Historic Settlement in New Brunswick and Sherbrooke Village in Nova Scotia.

An important component of Canada's museum community is the Canadian Museums Association, founded in 1947 to serve the country's institutions and those who work for them. From its head office in Ottawa, with its publications, seminars, conferences and museological resource centre, it promotes professional practices among museum employees and aids communication and the spread of information within Canada's healthy and growing museum community.

National Museums of Canada

In 1968 the National Museums Act incorporated the four national museums under one administration as the National Museums of Canada so as to increase their capacity to serve a greater public. As a result of federal government deliberations a new National Museum Policy was announced in March 1972 and National Museums of Canada was given the responsibility of implementing it.



Museum preparators installing an exhibit at the National Museum of Natural Sciences.

Basic to this new policy were the concepts of democratization and decentralization of Canada's cultural heritage. Key features included the establishment of a nation-wide network of 25 Associate Museums, including the four national museums in Ottawa, in which activities, collections and standards of member museums are raised to the same professional level and within which exhibits may be exchanged. Twenty-six National Exhibition Centres have been set up in areas not served by major museums and a Museumobile Programme has been established to take specially designed exhibits to smaller communities not otherwise served by major galleries and museums. National Museums of Canada has embarked on a vigorous publications program to better inform the public of the role of the corporation and the work of the museums.

Financial and technical assistance provided by the National Museums of Canada through the various funding programs of the Museums Assistance Programme fed about \$34 million into the museum system in Canada between 1972 and 1977. The National Museum Policy also provides for such essential services as the Canadian Conservation Institute in Ottawa, which has Atlantic and Pacific regional branches established and more planned, a computerized National Inventory for the cataloguing of museums' holdings and assistance in the training of museum professionals.

The National Museum of Natural Sciences. The National Museum of Natural Sciences has seven divisions: Botany, Invertebrate Zoology, Vertebrate Zoology, Mineral Sciences, Palaeobiology, Interpretation and Extension, and the Canadian Aquatic Identification Centre. It also maintains the Zooarchaeological Identification Centre, which identifies animal remnants from archaeological digs.

The museum is engaged in 70 major research projects undertaken by its staff members or associated scientists from universities and other outside organizations

and provides financial assistance, facilities and field work for several National Research Council postdoctoral fellows. More than four million scientific specimens are maintained in the museum's collections. They are available to and regularly used by scientists throughout the world. The museum also publishes scientific papers on subjects related to its collections.

A major renovation of the Victoria Memorial Museum Building, which is shared by the National Museum of Natural Sciences and the National Museum of Man, is gradually being completed. Audio-visual presentations, visitor-operated displays, drawings, models and thousands of specimens from the museum collections have been used in five permanent exhibit halls entitled The Earth, Life Through the Ages, Birds in Canada, Mammals in Canada and Animal Life. A special hall displays temporary exhibits from the museum and other sources. Exhibit halls of Plant Life and Animal Communities are in preparation.

The public lectures, film presentations and special interpretive programs offered by the museum have become increasingly popular with school classes and the general public. Popular publications, a school loans service of educational resource materials and a program of travelling exhibits make examples of our national heritage more accessible to Canadians across the country.

A torquetum, an astronomical instrument of the Copernican era, on display at the National Museum of Science and Technology.





The curator of the Ethnology Division of the National Museum of Man with some of the artifacts in the storeroom.

The National Museum of Man. The National Museum of Man collects, preserves, researches, interprets and displays artifacts and data of the cultural and historical heritage of Canada's varied population.

For this work the museum is organized in the following six divisions: The Archaeological Survey of Canada conducts problem-oriented research and archaeological rescue excavations on sites about to be destroyed or damaged by development. The Canadian Centre for Folk Culture Studies has the country's largest archive of folk culture materials, which represents some 40 ethno-cultural groups. The Canadian Ethnology Service conducts comprehensive research on Canada's native and Métis cultures; its Urgent Ethnology Programme is expanding yearly to study as many of the rapidly changing and disappearing cultures as possible. The Canadian War Museum is concerned with research, exhibits and publications in military history and houses an extensive collection of memorabilia ranging from military art to tanks. The Communications Division plans and coordinates the museum's exhibition and education programs; it provides a wide range of school loans, including the multi-media "Museum Kits", publishes educational materials and provides interpretive classes on the museum displays for school groups, while travelling exhibitions bring the treasures of Canada's heritage to people from coast to coast. The History Division carries out studies of Canadian society and material culture since the beginning of European colonization and currently publishes them in a series of booklets and accompanying slide packages entitled "Canada's Visual History" and in other scientific and popular publications; another program, a policy of saving packages from consumer products and everyday objects on today's market, will ensure the museum of their availability for tomorrow's Canadians.

The museum has seven stimulating exhibit halls in the Victoria Memorial Museum Building, in addition to those in the Canadian War Museum building. They include: "Immense Journey", an orientation gallery; "Canada Before Cartier", the story of prehistoric Canada; "The Inuit", a study of the people of the North; "People of the Longhouse", a portrait of the Iroquois; "The Buffalo Hunters", a study of the

Plains Indians; and "Children of the Raven", the life of the Northwest Coast Indians. Two more permanent halls—origins and development of folk culture and Canadian history—are near completion. A temporary exhibit hall houses the museum's travelling exhibitions and shows from other institutions.

The National Gallery of Canada. The function of the National Gallery since its incorporation in 1913 has been to encourage public interest in the arts and to promote the interests of art throughout the country. Under this mandate, the gallery has increased its collections and developed into an art institution worthy of international recognition.

The gallery's planning for the future emphasizes promoting the understanding of works of art. Another aspect of future planning came closer to realization in 1975 with the launching of the first stage of a two-part architectural competition for the design of a new National Gallery building.

There are more than 17,500 works of art in the gallery. The collections have been built up along international lines and give the people of Canada an indication of the origins of their traditions. The collection of Canadian art, the most extensive and important in existence, is continually being augmented; over 60 per cent of all new acquisitions since 1966 have been Canadian. There are many Old Masters, as well as a growing collection of contemporary art, prints and drawings, and diploma works of the Royal Canadian Academy.

Visitors to the gallery are offered an active program of exhibitions, lectures, films and guided tours. The gallery's reference library, which contains more than 50,000 volumes and periodicals on the history of art and other related subjects, is also open to the public.

The interests of the country as a whole are served by circulating exhibitions, lecture tours, publications, reproductions and films prepared by the National Gallery staff. The gallery promotes interest in Canadian art abroad by participating in international exhibitions and by preparing major exhibitions of Canadian art for showing in other countries. It also brings important exhibitions from abroad to be shown in Canada.

Major exhibitions at the National Gallery during 1975-76 included "High Victorian Design", "Donald Judd", "Photographs from the Collection", "The Calvary at Oka", "Seven Paintings by James B. Spencer", "Some Canadian Women Artists", "Recent Acquisitions of European Prints" and "El Dorado: The Gold of Ancient Colombia". The gallery's National Programme organized and circulated 21 exhibitions, including 12 new ones, throughout Canada and abroad to 64 bookings in 31 cities.

The National Museum of Science and Technology. The National Museum of Science and Technology, which celebrated its tenth anniversary in 1977, challenges over half a million visitors a year to climb, push, pull or just view the lively exhibitions built around its definitive collections. An additional 200,000 annually visit the National Aeronautical Collection at Rockcliffe Airport.

The exhibit halls feature displays of ship models, clocks, communications equipment, a chick hatchery set around old and new agriculture machinery, and artifacts of Canada's aviation history. There are numerous examples of milestones in Canada's history of ground transportation, from sleighs and carriages to giant



Boy with a Piece of Bread by Ozias Leduc.

steam locomotives and horseless carriages. The Physics Hall, with its skill-testing experiments and "seeing puzzles", delights young and old alike.

The museum's observatory houses Canada's largest refracting telescope, which is used for star-gazing in evening educational programs. Resource material is available from a 10,000-volume library that places special emphasis on a retrospective collection relating to Canadian aviation.

The museum also designs and builds exhibits that are sent on tour throughout Canada, and artifacts are exchanged with museums in Canada and abroad.

In the National Aeronautical Collection more than 90 aircraft illustrate the progress of aviation from its early days to present times and the importance of the flying machine in the discovery and development of Canada. Its collection of aircraft engines is one of the world's largest.

Educational programs on general or topic-oriented subject matter for all age groups are developed and conducted by a staff of tour guides. During the summer months a steam train makes a return trip from Ottawa to Wakefield, Quebec, giving its passengers a taste of the sights and sounds of a bygone era.

Libraries and Archives

Libraries

Libraries have existed in Canada since the early 18th century. Legal, theological, university and society libraries were in existence before 1850; after 1850 business and industrial libraries appeared, along with tax-supported public libraries. The greatest growth for all types of libraries has been in the years since World War II.

Because Canada is a federal state and libraries fall under provincial jurisdiction, there is no unified national library system. The public library systems of the provinces, though varying in detail, are alike in being supported by local and provincial funds (except for the Yukon Territory and the Northwest Territories, which are federally funded) and co-ordinated by a central library agency.

Public libraries feel they have a responsibility to be community resource centres open to all, in addition to being sources of print and non-print materials for the pleasure, information or education of their users. This belief has led to the libraries' greater involvement in providing information on community organization, services and facilities, etc. Along with this greater involvement has come a growing trend toward taking the public library to those who cannot or do not come to it; senior citizens, shut-ins, prisoners and the physically and economically handicapped use special materials, services and facilities provided by public libraries. People whose mother tongue is neither English nor French find that many libraries now provide foreign-language materials, often with the assistance of the Multilingual Biblioservice of the National Library, which assembles collections of books in selected languages and lends them to provincial libraries for circulation in their areas.

There are perhaps 10,000 school libraries in Canada now, as distinct from unorganized classroom collections. The emphasis in this type of library has shifted from the use of printed materials alone to use of a wider range of information sources, such as films, recordings, tapes, slides and kits. As a result, school libraries are becoming multi-media "resource centres".

College and university libraries went through a period of very rapid expansion in the 1960s and early 1970s, but growth is now slowing down. These libraries have been very active in applying automated techniques to library procedures in order to enable them to handle their rapidly increasing work-loads efficiently. They have also sought ways to co-operate in automation, collection rationalization and sharing resources. In these efforts they have had support from the National Library, which has conducted or sponsored a number of studies of particular relevance to academic libraries—studies of library collections (e.g., of law materials and government documents), inter-library loans and automated systems suitable for library use or for the development of bibliographic networks.

Special libraries—those serving companies, associations, institutions such as museums and hospitals, and government departments and agencies—number about 1,000. Among them, the government libraries tend to be the largest, especially the provincial legislative libraries. Quebec also has the Bibliothèque nationale du Québec. Some federal government libraries are de facto resource libraries in their subject fields for the whole of the country, but in general special libraries serve only authorized users from their sponsoring organizations.



The legislative library in Province House, Halifax, NS.

At the national level, the scientific resource library for Canada has been the National Science Library, which is now combined with the National Research Council's Technical Information Service to form the Canada Institute for Scientific and Technical Information (CISTI). CISTI's services to the scientific research and industrial communities include, in addition to its back-up serials and monograph collection, a computer-based selective dissemination of information (SDI) service, a companion on-line search service (CAN/OLE) and publication of a union list of scientific serials held in Canada.

The National Library of Canada celebrates its twenty-fifth anniversary in 1978. It specializes in the social sciences and humanities and in Canadiana of all kinds and discharges many national responsibilities. In accordance with the National Library Act of 1969, it administers the legal deposit regulations, publishes the national bibliography, *Canadiana*, and maintains union catalogues from which libraries and researchers can find out where in Canada specific works are held. It also assigns International Standard Book Numbers (ISBN) for English-language publishers in Canada. It provides the SDI service for the humanities and social sciences and makes one-time on-line searches of a number of data bases available for a minimal fee to libraries and individuals. It has taken a leading part in plans for network co-ordination on a national scale, particularly national bibliographic networks.

In Canada librarians are trained at the universities. Seven postgraduate schools offer master's degrees in library science and two, at the universities of Toronto and Western Ontario, also offer doctoral programs. In addition post-secondary courses for the training of library technicians are available in community colleges in many parts of the country.

Archives

Canadians have long shown an interest in their cultural heritage and are now demonstrating a greater concern about the preservation of the relics of the past. In response to this sense of awareness and prompted by the need to provide the proper guidelines to institutions of higher education the Association of Universities and Colleges of Canada appointed Professor T.H.B. Symons to examine the problems of Canadian Studies. Volumes I and II of his report were published in 1975. In his report, Professor Symons underlined the central role archives should play in the carrying out of studies on Canada and its past. He also called attention to the need for a national network of archival institutions at the national, provincial and regional levels.

No immediate and dramatic actions were taken as a direct result of this report, primarily because of the financial restraint applied at all levels of government. However, the idea of a more comprehensive role for archival institutions is gaining universal acceptance.

The National Film Archives were given increased support; irreplaceable audio-visual materials and film and television programs are now certain of proper and secure preservation and are also available for research. The "Union List of Manuscripts in Canadian Repositories" is being kept up to date to permit faster identification of original sources across the country. The province of Quebec is developing a network by adding other repositories to the regional archives of Montreal and Trois-Rivières.

The "Association des archivistes du Québec" and the "Association of Canadian Archivists" are working to develop a comprehensive policy for the future of archives in Canada.

Courses leading to the graduation of fully-qualified archivists are now being given at the University of Ottawa, and courses are also being given in many universities to better acquaint history students with the resources held in Canadian archival repositories and with the best methods of using them.

A national congress on archives is proposed for 1980 or 1981 to lay the foundation of effective archival services across Canada.

Cultural Exchanges

A world phenomenon since World War II has been the manner in which cultural and academic exchanges have assumed a major role in the conduct of relations between countries. The "cultural explosion" Canada has experienced in this period has enabled us to become a significant participant in the international cultural scene. While the development of the arts within Canada is encouraged by various federal and provincial cultural agencies, official cultural relations between Canada and other countries are entrusted to the Secretary of State for External Affairs.

The history of formal External Affairs involvement in cultural matters dates only from the early 1960s. Informal cultural exchanges had been effected previously either privately or through various Commonwealth and other international organizations. The government has now established formal cultural exchange arrangements with a number of countries, notably those from which significant



Mario Bernardi conducting the National Arts Centre Orchestra.

proportions of the Canadian population are descended, and allocates a substantial budget annually to cultural exchanges.

The objectives of this expansion of Canadian cultural relations include the goals of reflecting on the world scene the growing cultural creativity and accomplishment of Canadians and increasing the number of opportunities for members of the Canadian artistic and academic community to perform, teach or study abroad. Exchanges are also designed to support other foreign policy objectives, such as enhancing knowledge of and respect for our country abroad, and to further national unity and a sense of national identity at home.

Cultural projection abroad may be conveniently divided into two types of programs, one involving the exchange of persons and the other concerned with artistic promotion.

Programs involving the exchange of persons have, among other objectives, the goals of: bringing leaders in the Canadian artistic and academic communities into contact with persons in similar fields in foreign countries; creating bonds of understanding and channels of academic and scientific co-operation that can help avoid duplication in research, while allowing the most productive use of international experience; and encouraging the development of creative talent and leadership in the Canadian artistic and academic community by offering broader and more challenging international opportunities.

Academic exchanges include programs of university scholarships, inter-faculty exchanges and support of Canadian participation in international cultural and educational conferences. In addition, other programs make provision for exchanges of non-academic delegations of Canadian experts or professionals in socio-cultural fields such as architecture, urban studies, environment and public service, and for exchanges of young people with leadership potential, young technicians and summer workers. Other cultural exchanges bring foreign artists and critics to Canada for working visits and assist Canadian authors, composers and artists invited to work or perform abroad.

A large part of the cultural relations budget of the Department of External Affairs is devoted to artistic promotion—the support of travelling art exhibitions, film weeks and performance tours that illustrate Canada's achievements in the arts. Programs in this field include support of Canadian participation in international cultural festivals, gifts of books to foreign universities and research centres, and reciprocal literary prizes. The department sponsors foreign tours by musical ensembles such as the National Arts Centre Orchestra and the Edmonton, Montreal, Toronto and Vancouver symphony orchestras and by the major ballet companies. In 1977 and 1978 a tour of the People's Republic of China was arranged for the Toronto Symphony Orchestra and the National Arts Centre Orchestra visited Italy and the Federal Republic of Germany. The National Ballet was seen in Britain, the Netherlands and the Federal Republic of Germany. Also in the last two years *Le Théâtre Expérimental de Montréal*, *Le Théâtre du Rideau Vert* and *Le Théâtre Populaire du Québec* have toured under the department's auspices in France, Belgium and Switzerland, while *Théâtre Passe Muraille* was sent to Britain, the Netherlands and Scandinavia. Many small ensembles of folk, popular and country music artists and of dancers, classical musicians and actors have also represented Canada abroad. Major exhibitions of Canadian art have toured extensively, including a collection of paintings by the Group of Seven sent to western Europe and the USSR, Canadian landscape paintings seen in China and contemporary works from the Art Bank of the Canada Council that have toured throughout New Zealand, Australia and western Europe. Collections of prints drawn from the Department of External Affairs' permanent collection are in continual circuit throughout the world.

The Department of External Affairs also has a rapidly expanding program to promote the teaching of Canadian subjects in universities and institutions abroad, in the expectation that students who take these courses will go on to reach positions of influence in government, business, journalism and the academic communities of their countries, where their understanding of and sympathy for Canadian aspirations and points of view will profit Canada. For some years, External Affairs has assisted the Association for Canadian Studies in the United States and has seen a steady increase in the number of Canadian subjects taught in US universities. A similar program exists in the United Kingdom, where a chair and centre for Canadian Studies was established at Edinburgh University in 1975. An Association of Canadian Studies in France, founded in 1976, is based at the University of Bordeaux. Direct support for Canadian Studies programs is under way or planned for Belgium, the Federal Republic of Germany, Italy and Japan.



Trent University, Peterborough, Ont.

Governments and Cultural Policy

Private and Public Responsibilities

All Canadians live their cultures, but very few of them discuss the subject very much. When they do, they usually regard culture primarily as a personal affair. While certain kinds of government support are welcome, any attempt by any government to determine the substance of cultural life would be inconsistent with Canadian values.

Nevertheless, members of the public demand certain kinds of cultural services from their governments. There seems to be increasing public interest in cultural expressions that illuminate the reality of Canada and Canadians. The problems are complicated by the cultural diversity of the population, the decentralization of public authority and the openness of Canada to cultural currents from Europe, the United States and other parts of the world. The resources available from the market and from private patronage, while important, are inadequate to the task; it is recognized that public authorities must also play a part.

Thus cultural policies in Canada are characterized by a search for acceptable ways in which governments may support cultural development and the production and enjoyment of the arts, without imposing official values, control or censorship.

Governments as Proprietors

By historical accident or considered decision, governments own a great deal of property of cultural importance to Canadians. Holdings range from national

monuments like the Parliament Buildings, to the most representative collections of Canadian painting, to the records of obscure 19th century parish priests. From this role as proprietor have emerged important institutions like the provincial and federal archives, historic sites and monuments services, and important art galleries and museums operated at all three levels of government. In short, governments are the predominant collectors and exhibitors in the country.

The responsibilities of proprietorship have been recognized in a number of ways. Collections have been steadily expanded and diversified. Facilities are being improved and interpretation services strengthened so that public holdings may be more readily available and meaningful to the public.

In building construction, governments at all three levels have been prepared to give some weight to aesthetic as well as functional considerations. This extends beyond architectural design to include the use of works of art both in exterior landscaping and in furnishing. Recently there has been a new interest in renovating heritage buildings either for their historic purposes, as was the Kingston City Hall, or for new uses such as government office space.

As proprietors, governments have also been prepared to construct and operate physical facilities for exhibition and performance. Over the past 15 years, there has been quite remarkable progress in building theatres and concert halls. Virtually all the major urban areas, and many smaller centres as well, are now reasonably adequately equipped.

It is striking that investment in cultural goods and facilities for the enjoyment of the public is not limited to any single level of government. One finds libraries, concert halls, art collections and heritage buildings owned and made available by municipalities and by provincial and federal authorities. Numerous co-operative arrangements have developed between governments to strengthen the services offered and to assist with financing, especially of capital costs. Federal grants to provincial governments and municipalities have been important, especially in building facilities for exhibition and the performing arts; provincial grants to municipalities are essential for the construction and operation of public libraries, cultural centres and many programs offered at the local level. In some provinces, very substantial lottery revenues are allocated to municipal capital expenditure on cultural and recreational facilities.

Underwriting Creativity

Apart from purchasing some of their work for collections or other public purposes, governments took it for granted until the middle of this century that creative people would make it on their own. No substantial expenditures were regularly devoted to the support of people rather than the purchase of product.

The report of the Massey-Lévesque Commission in 1949 was the turning point at which it became apparent that a flourishing cultural life in Canada simply could not be sustained by market revenues, private benevolence and artists living in poverty. Since that time governments have recognized, albeit hesitantly, that it is appropriate for some public funds to underwrite painters, dancers, musicians and other artists, and the companies within which some of them work. Even now, very few professional artists approach income levels regarded as normal in other professions,

but the current level of creative expression in Canada is in some measure a reflection of government support.

Several techniques are used to channel public funds to artists in a rational way, without constraining or attempting to control the direction of their work. A number of arts councils have been established separate from the normal government structure. The Canada Council, which is the chosen instrument of the federal government, is a statutory foundation, or public trust, that is expected and required to make its own decisions without direction from any authority apart from its legislation. Several provincial governments use this pattern, with modifications to meet regional requirements.

The arts councils in turn are guided by advice from the creative community itself and typically rely on recognized practising professionals in a given discipline to advise on the best distribution of the available funds. There are seldom enough funds to meet the need and very hard choices must be made, so the system is designed to identify excellence as objectively as possible.

Governments as Educators

In a broad sense, all education policy is cultural policy. The schools are the most important cultural institutions of Canadian society. Education is a provincial responsibility administered largely at the municipal level; the subject is accordingly diverse, complex and locally oriented, and the paragraphs that follow can suggest only a few general characteristics.

School programs in Canada have always recognized the importance of the arts as an element in general education. Schools have been teaching literature for as long as

A class sing-song at an elementary school in New Westminster, BC.



there have been schools, and in many jurisdictions the current tendency is to increase the stress on contemporary works, particularly Canadian writing. Music is also well established in almost all jurisdictions and many schools offer programs in the visual arts.

Recently there appears to have been increasing concern, reflected both in policy and in student interest, with theatre arts, television and films. Television has appeared both as a teaching aid and as a subject of study and there have been many interesting and rewarding innovations in the use of video technology by students as an additional medium of cultural expression.

In co-operation with school boards, and often with the financial support of other levels of government, many performing arts companies mount presentations to school audiences and associate student companies with their principal endeavours. In addition, many professional companies and community groups offer weekend theatre for young audiences.

Governments as Regulators

Following public opinion, governments have generally avoided any conscious interference with the arts and the cultural life of the community, treating artists and cultural organizations like ordinary private or corporate citizens. Nevertheless, significant regulatory policies have been established in a few defined areas. Space permits only two or three examples.

Governments provide the legal context for artistic production (through legislation respecting copyright and other property rights, for example) and tax policy is designed to favour the arts and other cultural activities by providing tax exemptions for private donations to arts organizations. Sometimes they have also been prepared to intervene to compensate for the economic disadvantage Canadian producers suffer beside foreign competition that can achieve very low unit costs through access to large international markets.

Many provincial and municipal governments have recently shown active interest in legislation designed to protect privately owned heritage buildings and neighbourhoods from demolition or intensive modification. Here again, regulatory policies are often coupled with incentives to encourage the restoration and re-animation of the cultural legacy received from earlier generations.

Governments as Producers

Apart from a few special cases like the National Arts Centre Orchestra, governments have preferred not to assume managerial responsibility, even indirectly, for artistic performance or the production of cultural works; the work of the artist or company, although often intended for the public, is in the private sector. Where government presence exists it is intended to be unobtrusive, supportive and neutral.

One striking exception to the foregoing is radio and television broadcasting, where the limitations of the technology, the economics of the industry and the character and scale of the country have dictated a mixed public and private system. However, even in the public sector governments have chosen to operate through statutory corporations in order to preserve official detachment from program



Karen Kain as Lise in the National Ballet of Canada production of La Fille Mal Gardée.

content, and both public and private sectors are regulated by a separate commission that has no operational responsibilities.

As cultural institutions, the broadcasting enterprises are second in importance only to the schools; indeed some people would rank them first. One could scarcely over-estimate the cultural significance of the radio and television networks of the government-owned CBC, which now serve almost all of Canada in both English and French. At the same time, an important recent development in public sector broadcasting has been the establishment of some provincial educational television services; these are normally operated through statutory corporations and complement the CBC and private services with programming designed for school use, for pre-school children and for adult learners.

In conclusion, the cultural policies of Canadian governments are probably a rough reflection of the cultural characteristics, aspirations and priorities of the Canadian population. Since the population is diverse, dispersed and pluralistic, the policies are equally diverse and sometimes perhaps even contradictory. Like the country itself, cultural policy is a mosaic rather than a melting-pot.

Education

The beginnings of the post-industrial society are upon us. As Daniel Bell and others have suggested, the creation of a service economy and the pre-eminence of professional and technical occupations characterize the structure of a post-industrial society.¹ Thus the problem of producing the required professional and technical manpower is one that education must face.

A second major problem of modern-day education lies in the area of learning. If one stops to consider that children today leave elementary school with what is, in many ways, more knowledge than the greatest philosophers of ancient times accumulated, then the problem is evident. The extremely high input of data and basic information in today's society has created a need for new methods of instruction. Attempts to arrive at a solution are hampered by the fact that western society values individualism, which creates a demand for greater flexibility in teaching methods.

To solve these problems, an important step has been taken in Canada through the development of an array of educational structures at the tertiary, or post-secondary, level. Further steps include those at the elementary and secondary levels, where programs are being structured around such innovations as non-graded systems, promotion by subject and the elimination of departmental examinations, with an emphasis on continuous evaluation. New teaching methods include the use of educational aids such as closed circuit and educational television, tape recorders and overhead projectors to facilitate and enrich the learning process of individual students.

There has been a concomitant need for an increase in the professionalism of the teaching staff at all educational levels. In part, this has resulted in a shift of teacher-training programs to universities, with an accompanying decrease in numbers of teachers' colleges in Canada.

Educational Jurisdictions

Under the British North America Act, Section 93, the provinces are generally responsible for education, except for federally-sponsored schools for Indian and Inuit students, children of servicemen in Europe and inmates of federal penitentiaries. In addition the federal government helps finance tertiary education in the provinces, participates in informal education and makes grants for research personnel and equipment.

Provincial autonomy has resulted in the development of distinctive educational systems in the various provinces. There are, however, certain similarities. Each province and territory has established a department of education, headed by a minister who is a member of the Cabinet and administered by a deputy minister who, as a public servant, advises the minister and administers legislation relating to education. Each department of education is engaged in supervising the quality of educational systems, certifying teachers, providing financial assistance to school boards and determining courses of study and lists of textbooks.

¹Daniel Bell. "Notes on the Post-Industrial Society," *The Public Interest* (Winter 1967 and Spring 1968).



An elementary school classroom at Tuktoyaktuk, NWT.

In some provinces the original department of education has been changed to create a second government department dealing exclusively with post-secondary education; provinces with two departments concerned with education are Alberta, Manitoba, Ontario and Saskatchewan, while Quebec has established two directorates within its department of education, one concerned with universities and the other with colleges.

Elementary and Secondary Education

Administration

The provinces have delegated considerable responsibility for operating publicly controlled elementary and secondary schools to locally-elected or appointed school boards whose authority is determined by legislation. These boards are responsible for building and maintaining schools, hiring teachers and preparing budgets. With decreases in the degree of centralization in most provinces, local authorities exercise greater control in setting year-end examinations in the final year or years of secondary school and in determining the curriculum and textbooks to be studied.

A most important change in the last decade has been the restructuring of local education administrations through the creation of larger school districts operating larger schools. Enlarged administrative units ensure that all areas in a province have similar levels of education, and larger schools, being more solvent, are in a better position to provide the necessary teaching and administrative personnel and up-to-date educational equipment.

Following the recommendations made by the Royal Commission on Education and Youth in 1964, school districts have been consolidated in Newfoundland. The

300-odd denominational boards were reduced to 35 districts—12 Roman Catholic school districts, 21 integrated Protestant boards and one each for the Pentecostal and Seventh Day Adventist denominations. In Prince Edward Island some 300 local units have been integrated into five regional boards. The trend in Nova Scotia is also toward the consolidation of small educational units and New Brunswick has replaced its 422 school districts with 33 enlarged districts.

In Quebec legislation enacted in 1961 created large units of administration for secondary school education. The number of elementary school boards was reduced from 1,100 in 1972 to 175 in 1975.

As a result of legislation in the late 1960s, significant administrative reorganization occurred in Ontario. Thousands of small units, administered by three-member boards of trustees, were replaced by enlarged county boards of education integrating elementary and secondary school operations. Large cities have been exempted from this reorganization and are allowed to administer their own school systems. Most Roman Catholic school administrations have been integrated within these county boards, although separate schools have the option of whether or not to join. In 1975 there were 92 school boards for the elementary schools, including 58 Roman Catholic and two Protestant separate school boards.

In all four western provinces districts have been consolidated. In fact Alberta and British Columbia were the precursors of this trend toward amalgamation. Since 1937 the school districts' authority in Alberta has to a large extent been assumed by enlarged school divisions (aggregations of designated school districts) and counties are gradually superseding divisional organizations. In the mid-1940s British Columbia reduced the number of school districts from 650 to 74 large administrative districts. In the 1960s school administration in Manitoba was reorganized. In Saskatchewan recommendations regarding implementation of consolidated school districts are being considered.

School Organization

Kindergarten classes are offered in all but two provinces, Prince Edward Island and New Brunswick. The other provinces provide this education to five-year-olds in the publicly controlled school system; however, it should be noted that these services are found predominantly in the larger urban centres. Throughout Canada there are increasing numbers of privately operated nursery schools and kindergartens for children from three to five years of age.

The traditional organization of elementary and secondary schools has been grades I to VIII in elementary and IX to XII in secondary. Modifications on this particular arrangement have come through the introduction of junior high schools. Junior highs have developed in all provinces except Newfoundland, Quebec and Saskatchewan, and generally include grades VII, VIII and IX, with senior high schools providing grades X, XI and XII (and XIII in Ontario).

Most secondary schools offer technical and commercial subjects as options in the academic curriculum. Vocational, technical and commercial secondary schools, at one time located only in large cities, are now an integral part of the whole school system in many provinces. An increasing number of composite schools offer optional programs in academic or technical subjects such as agriculture, home

economics and commerce, allowing more flexibility for individual interests and capabilities.

A key change in the last few years has been the tendency toward non-graded or continuous-progress school organizations, which allow students to advance at their own rate. Many provinces are in the process of developing innovative approaches in handling non-graded school systems.

The Atlantic provinces are accelerating the development of a school organization emphasizing promotion by subject rather than by grade, using a "credit" system. Nova Scotia has in addition introduced a program allowing secondary school students with high academic standing to carry one or more extra courses.

In Quebec, programs with graduated options and promotion by subject are increasingly emphasized.

Ontario is also proceeding with a "credit" system. In the secondary schools, implementation of this policy is leading to increasingly flexible individual program scheduling, optional diversified courses and promotion by subject.

The western provinces are also encouraging a less rigid classification by grade. In Saskatchewan the traditional twelve grades have been replaced by four divisions, each consisting of three years of school for a student making normal progress. In Divisions 1 and 2, the principle of non-grading with continuous evaluation and flexible promotion has been adopted; Division 3 programs have been designed to



accommodate the special problems of the young adolescent. The newly developed programs stress more flexibility, which makes allowance for individual differences. Students are encouraged to discover facts and think for themselves; at the core of these divisions is the belief that students should develop values, skills and ideas or concepts, rather than learn by rote.

Since 1969 Nova Scotia has made provision for individuals with incomplete formal high school education to obtain secondary school accreditation by passing a series of tests prepared by the Commission of Accreditation of the American Council on Education. Similarly, Alberta now allows adults who have upgraded their education through informal learning and adult education courses to obtain a secondary school diploma.

Education systems in the Northwest Territories and the Yukon Territory are geared primarily to fulfilling the needs of the local population, chiefly the Inuit, Indian and Métis living in isolated settlements. In the Northwest Territories, responsibility for education was moved from the federal Department of Indian and Northern Affairs to the new Territorial Department of Education; the official transfer occurred in the Mackenzie District in April 1969 and in the Franklin and Keewatin districts in April 1970. The Territorial Department of Education is continuing the progress made by the federal government in providing a far-flung, modern and solidly based school system and it has begun constructing numerous new schools and developing new curricular materials relating to the cultural backgrounds of the students. Apart from that, the schools in the Northwest Territories have chosen to follow the programs of Alberta and Manitoba.

The majority of schools in the Yukon Territory have always been classified as public and have been administered directly by the Yukon Department of Education in Whitehorse. The Yukon Territory has chosen to follow the British Columbia school curriculum, although the program is adapted to incorporate material relevant to the heritage of the native peoples.

The fact that the Northwest Territories and the Yukon Territory are facing the challenge of preparing their students to compete in contemporary Canadian society is clear, as more children are enrolled in school and more are staying in school longer and completing grade XII.

Minority and Second Language Instruction. The trend toward giving instruction in the second official language in the elementary and secondary grades of publicly controlled schools has accelerated in many provinces.

In 1970 the federal and provincial governments signed an agreement providing support to official language education in each province. This co-operative program aims to ensure that Canadians of both official language groups have the opportunity to educate their children in their own languages and that the children of the majority language group in each province have the opportunity to learn, as a second language, the other official language of the country. Under this program federal funds are transferred to provincial governments to help pay the supplementary costs of providing minority language education or second language instruction.

In 1974-75, 40 per cent of the eligible enrolment was receiving second language instruction, while 230,000 students in Quebec and 183,500 in the other provinces were receiving their education in the minority language of their province.

Levels within elementary and secondary schools

Nfld. -----

I	II	III	IV	V	VI	VII	VIII	IX	X	XI
---	----	-----	----	---	----	-----	------	----	---	----

Que.¹ -----

Elementary						Secondary				
1	2	3	4	5	6	1	2	3	4	5
I	II	III	IV	V	VI	VII	VIII	IX	X	XI

NS², PEI, NB
Alta., NWT -----

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
---	----	-----	----	---	----	-----	------	----	---	----	-----

BC, Yukon -----

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
---	----	-----	----	---	----	-----	------	----	---	----	-----

Sask. -----

Division 1			Division 2			Division 3			Division 4		
Lev. I	Lev. II	Lev. III	Lev. I	Lev. II	Lev. III	Lev. I	Lev. II	Lev. III	Lev. I	Lev. II	Lev. III
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

Ont., Man. -----

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII*
---	----	-----	----	---	----	-----	------	----	---	----	-----	-------



Elementary



Secondary



Junior High



Senior High

* Ontario only.

¹ In Quebec, as a rule, the elementary level includes Grades I to VI and the secondary level Grades VII to XI. It is possible to have an additional year of study between the two, as a transition year; pupils who have completed Grade VI and do not have the necessary preparation for the secondary level are placed in this transition year.

² There is a compulsory year of schooling preceding Grade I in Nova Scotia. It is classified with pre-elementary, although it is an integral part of the elementary system.

Table 1. Elementary and secondary school enrolment, 1975-76

Province or territory	Public	Private	Federal	Blind and deaf	Total
Newfoundland.....	157,768	280	-	127	158,175
Prince Edward Island....	27,850	-	57	15	27,922
Nova Scotia.....	202,606	1,418	665	452	205,141
New Brunswick.....	164,999	421	838	-	166,258
Quebec.....	1,374,765	87,987	4,751	1,068	1,468,571
Ontario.....	1,994,638	54,598	7,391	1,349	2,057,976
Manitoba.....	228,127	7,122	7,254	168	242,671
Saskatchewan.....	220,973	1,453	5,530	150	228,106
Alberta.....	439,354	5,651	3,719	176	448,900
British Columbia.....	542,680	23,071	2,258	278	568,287
Yukon Territory.....	4,975	-	-	-	4,975
Northwest Territories....	12,496	-	-	-	12,496
Canada.....	5,371,231	182,001	32,463	3,783	5,594,102 ¹

¹ Includes 4,624 students in Department of National Defence schools overseas.

- Nil or zero.

Enrolment

Enrolment of students at the elementary and secondary levels in public schools in the 1950s and 1960s showed a rather rapid increase following the high postwar birth rate in Canada. However, this boom has ended. First noticed in the 1971-72 school year, the negative trend in enrolment at these levels, together with a decrease in the annual number of births, implies a continuing decline in the public school population. Changes in immigration policy or enlargement of pre-elementary programs could have some effect on this trend but would not be sufficient to slow it down significantly or, even less likely, to reverse it.

Between 1974-75 and 1975-76 enrolment in the public school system declined by nearly one per cent, from 5,418,854 to 5,371,231. Quebec continued to lead this trend, with a decrease of 3.3 per cent in its total enrolment.

At the pre-elementary level enrolment in the 1975-76 school year showed an increase of 3.9 per cent over the previous year, due largely to the addition of more facilities. In Canada as a whole the total elementary enrolment in public schools declined 2.4 per cent from 1974-75 to 1975-76; Prince Edward Island, Quebec and Nova Scotia showed decreases larger than the national average—5.0, 3.7 and 3.6 per cent, respectively. At the secondary level enrolment decreased very slightly, as all jurisdictions except Quebec, Saskatchewan and the Northwest Territories experienced increases. It is expected that only after the 1977-78 school year will the present declining elementary level enrolment have a significant effect on secondary level enrolment.

Teachers

The number of teachers in the public elementary and secondary schools did not change significantly over the last two years, a decrease of only 0.3 per cent being expected.

Vocational and Technical Education

In the last decade there has been a rapid development of vocational and technical education in Canada. For the purposes of this article, vocational education includes all training (the great majority of cases not requiring a complete high school education for entrance) for occupations requiring varying degrees of skill, normally taking less than one year to acquire and in the performance of which greater emphasis is placed on manipulative skills and predetermined procedures than on the application of ideas and principles.

Vocational training is available in publicly operated trade schools and similar institutions, in private trade schools and business colleges, in provincially registered apprenticeship programs, in publicly supported training-in-industry programs for employees and in on-the-job training programs introduced as a measure to offset unemployment. Institutions similar to public (provincially operated) trade schools include adult vocational centres, trade divisions of community colleges and schools for specific occupations such as nursing aid schools, forestry schools, and police and firefighter training establishments. Not included in this discussion are vocational and composite high schools; while in some provinces the courses offered in these secondary schools continue to provide training leading to employment, changing aims and school organization have made the distinction between academic and vocational students less and less recognizable.

In instances where applicants do not have the required academic background to proceed with vocational training, there are upgrading courses to bring trainees to the required educational level. Many vocational centres also offer language training for those who do not have the proficiency in either English or French to receive instruction in a vocational course. Short "orientation" courses that guide trainees into the proper skill areas and help them brush up prerequisite skills are also made available.

Adult Continuing Education

There is a wide array of educational opportunities for adults in Canada today. Most school boards, trade schools and adult vocational centres, institutes of technology, community colleges and universities offer courses during the day and evening. The provincial departments of education provide home study courses and educational television programs, while other government agencies, such as the departments of agriculture provide a variety of extension services. Non-profit organizations also offer community interest courses and many professional associations encourage their members to participate in professional development or special certificate courses that they sponsor. In addition many employers, both public and private, provide in-service education programs in the form of either on-the-job training or other organized learning activities.

The range and availability of courses has had its impact on participation. Enrolments in programs conducted by public educational institutions increased by approximately 165 per cent from 1960-61 to 1970-71 and by another 25 per cent from 1970-71 to 1974-75. In the latter school year approximately 1.5 million adults enrolled in courses to complete formal studies, to upgrade vocational skills or to develop new hobbies and interests.



A biology class in Chicoutimi, Que.

Tertiary Education

The past decade has witnessed an extraordinary increase in enrolment at the tertiary level of education, an increase that surpassed the elementary-secondary rate of growth during the same period. This educational level has two main sectors: the non-degree-granting institutions, encompassing community colleges and other related institutions, teachers' colleges and diploma schools of nursing; and degree-granting institutions, including universities and affiliated colleges. Over the decade the increase in enrolments was especially marked in the universities and community colleges, although at present there is a shortfall in enrolment in the former.

Several factors contributed to this continuing significant growth. The main ones are the higher retention rates in secondary schools and the high birth rates in the postwar years, which resulted in increases in enrolments at the elementary-secondary level and culminated in a rise in numbers at the tertiary level. Other factors are the growing diversification of types of post-secondary institutions and programs that cater to individual interests and abilities and the supposition that education beyond the secondary level is a path to increased social mobility.

Community Colleges and Related Institutions

Community colleges have developed to meet the need for various types of programs for students seeking post-secondary education in other than the university sector. Enrolments in these institutions are rapidly increasing because of the

community colleges' flexible open-door policies. Further, the need for semi-professional personnel in a system that is rapidly moving toward a service economy has recently stimulated increased enrolments.

Most colleges are provincially supported and exercise various degrees of autonomy. High school graduation is a prerequisite for entrance to post-secondary programs, but where this is lacking many colleges provide a qualifying year. In addition, or alternatively, some institutions permit older applicants without the necessary qualifications to attend classes as "mature" students.

Although community colleges are not degree-granting institutions, some do offer the junior years of a university program, from which graduates may apply for admission to the senior years at a university. Principally, however, they offer diploma or certificate programs that lead directly to careers in applied arts, business or a wide range of highly skilled technical occupations. Most programs require two or three years for completion, but a few may be completed in one year and even fewer may take up to four years. Generally speaking, certificates are granted for completion of one-year programs and diplomas for the longer programs.

Provincial Systems of Community Colleges. In the Atlantic provinces, community colleges include: the College of Fisheries, Navigation, Marine Engineering and Electronics and the College of Trades and Technology in Newfoundland; Holland College in Prince Edward Island; an agricultural college, a teachers' college, the technical campus of the College of Cape Breton, an institute of technology, a marine institute, a land survey institute and a federal Coast Guard College in Nova Scotia; and the New Brunswick Community College, the Atlantic Baptist College and a forest ranger school in New Brunswick. The New Brunswick Community College was established recently, and comprises five campuses, including the former New Brunswick and Saint John institutes of technology.

In Quebec, the Collèges d'enseignement général et professionnel (CEGEPs), offering three-year terminal technical studies and two-year academic programs (a prerequisite for entrance to university), were inaugurated in the mid-1960s following recommendations of the Royal Commission on Education. This new college system incorporated a variety of post-secondary institutions, including many normal schools, diploma schools of nursing and institutes of technology. In addition to the 38 CEGEPs, some of which are multi-campus institutions, many private colleges, whose numbers vary from year to year, are approved for public instruction at the post-secondary level.

In Ontario, colleges of applied arts and technology (CAATs) were established in 20 regions in 1965. They are oriented to providing vocational and technical education. Other institutions in this educational sector include the Ontario College of Art, the Toronto Institute of Medical Technology, the Canadian Memorial Chiropractic College, four colleges of agricultural technology and a school of horticulture. In 1974-75 there were 56,000 students enrolled in the CAATs and other related institutions.

Manitoba set up a community college structure in 1969, redesignating the Manitoba Institute of Technology and Applied Arts and two vocational centres as the Red River, Assiniboine and Keewatin Community Colleges, respectively.

The province of Saskatchewan has 12 community colleges, one technical institute and two institutes of applied arts and science. The community colleges, created in

1975, are designed to offer credit and general interest programs to residents on a part-time basis. The colleges have no campuses, buildings or classrooms; instead they rent existing facilities in their respective regions. The institutes located in Moose Jaw, Regina and Saskatoon provide vocational and technical programs for full-time students.

In Alberta there are two institutes of technology, eight community colleges, two agricultural and vocational colleges and two private church-related colleges. A third agricultural and vocational college at Vermilion became part of Lakeland College at Lloydminster in 1975; the latter, one of the eight community colleges mentioned above, is operated jointly by the Alberta and Saskatchewan governments. The two institutes of technology and the two agricultural and vocational colleges offer only career programs at the post-secondary level, but the community colleges offer university transfer programs as well. The two private colleges offer university transfer programs only.

In British Columbia there are 14 regional or community colleges, an institute of technology and two private colleges; the Vancouver School of Art is part of the Vancouver Community College. The majority of students attending community colleges are enrolled in university transfer programs, which enable students in regions remote from the lower mainland and Victoria to acquire their junior years of university closer to home. Four of five recently opened colleges and the two private colleges offer university transfer programs only. On the other hand, the British Columbia Institute of Technology offers career programs only; students may enter the second year of programs at this institution having completed the first year of an articulated career program at a community college in their region.

Schools of Nursing

Most diploma programs of nursing, which prepare graduates for certification as registered nurses (RNs) in the provinces in which they will practise, have now been transferred from hospital schools to community colleges; hospital schools no longer exist in Quebec, Ontario or Saskatchewan. While most training in the other western provinces in the 1975-76 school year took place in hospital schools, nursing diploma programs were available in community colleges as well. Only in the Atlantic provinces was training carried out exclusively in hospital schools.

There are also schools of nursing located in universities, where students work toward a bachelor of science in nursing or an equivalent degree. Graduates of these programs are also eligible for registration, but they have an added advantage in entering teaching or administrative posts.

In many instances the transfer of diploma programs to community colleges has reduced the duration of training from three to two years. In Quebec, however, the program still requires three years for completion.

In the fall of 1975 the reported total enrolment in diploma programs at hospital schools and community colleges was 22,667. (One school in Newfoundland, one in Alberta and two in Quebec did not report their enrolments. The actual figure is estimated to be 23,000.) This shows a drop of almost 15 per cent from the peak enrolment of 26,545 in 1970.

Teacher Training

Until recently only teachers at the secondary level were required to have university degrees. Teachers for the elementary schools were trained in teachers' colleges, or normal schools. Over the past few years, however, the requirement for public school teachers in Canada to have university degrees has been introduced and now the requirement is almost universal. In September 1975 only one teachers' college, in Nova Scotia, remained; during the previous year four operated in Ontario; as recently as 1973, 13 teachers' colleges—one in Nova Scotia, two in New Brunswick, two in Quebec and eight in Ontario—were in existence.

From 1972 to 1973 the number of students in teachers' colleges dropped by 60 per cent, from 3,255 to 1,304; from 1973 to 1975 there was a further drop of 55 per cent to 567 students, all attending the Nova Scotia Teachers' College.

Table 2. Full-time enrolment in post-secondary education¹, 1975-76

Province	Community colleges and related institutions ²		Hospital schools of nursing ³	Universities and affiliated colleges
	Technical programs	University transfer programs		
Newfoundland	1,154	—	600	6,181
Prince Edward Island	545 ⁴	—	163	1,463
Nova Scotia	1,308	744 ⁵	842	17,547
New Brunswick	775	—	534	10,984
Quebec	53,371	64,292	—	75,020
Ontario	59,640	—	—	156,405
Manitoba	2,097	—	949	18,431
Saskatchewan	2,334	63	—	14,065
Alberta	11,575	2,282	1,406	31,755
British Columbia	7,916	7,662	1,001	31,337
Canada	140,715	75,043	5,495 ⁶	363,188

¹ Includes enrolments in the non-university sector (post-secondary courses in community colleges and related institutions, teachers' colleges and hospital schools of nursing) and in the university sector (universities and affiliated colleges).

² Related institutions include colleges for special fields such as agricultural technology, art, nautical sciences and forestry.

³ Diploma program leading to RN.

⁴ Estimate.

⁵ Includes 567 students enrolled at the Teachers' College.

⁶ An additional 17,172 enrolments in nursing diploma programs are included under technical programs in community colleges.

— Nil or zero.

University Education

By definition, a university is a post-secondary educational institution that has degree-granting powers. The number of such institutions has risen to over 60 in the 1970s. In addition, there are significant numbers of colleges affiliated with universities.

Most Canadian universities provide instruction in English, but there are also a number of French degree-granting institutions and some bilingual institutions such as the University of Ottawa and Laurentian University in Sudbury. Institutions range in size and number of faculties from those with full-time enrolments of less than 1,000 students and one faculty to universities with more than 10,000 students and numerous faculties offering a comprehensive range of programs.

Depending on the province, a student must have a junior or senior matriculation certificate from a secondary school in order to gain admission to courses leading to a first degree. Many universities now require or suggest, in addition, that applicants write specified aptitude tests. The length of programs varies from three to four years for a pass bachelor's degree to five years or longer for a professional degree in medicine, theology, architecture or law. The master's degree program following the bachelor's degree requires one or more years of study and intensive research after completion of the master's degree courses.

For the third straight year there was an increase in full-time enrolment in degree, diploma and certificate programs in universities. Final figures indicate an increase of 7.1 per cent in 1975-76 over the previous school year. Once again a significant feature of this was the continued growth in the number of women enrolled in these programs, up to 41.6 per cent in 1975-76 from 40.3 per cent in 1974-75.

Financing

Expenditures on education in the years 1973-74, 1974-75 and 1975-76 are shown in Tables 3 and 4, by level of education and by source of funds respectively.

Table 3. Expenditures on education, by level of education
(million dollars)

Level	1973-74	1974-75 ¹	1975-76 ²
Elementary and secondary			
Public	6,112.8	6,907.8	8,051.4
Private	200.1	247.5	298.2
Sub-total	6,312.9	7,155.3	8,349.6
Post-secondary			
Non-university	656.5	792.4	931.6
University	2,029.9	2,372.1	2,851.3
Sub-total	2,686.4	3,164.5	3,782.9
Vocational	635.9	693.4	831.7
Total	9,635.2	11,013.3	12,964.2

¹ Preliminary figures.

² Estimates.

The federal contributions shown in Tables 3 and 4 do not include transfers to the provincial governments for post-secondary education or for the minority language program. If these federal transfers were considered the adjusted contributions for the three years would be, respectively: federal, 22.1, 22.3 and 21.9 per cent, and provincial, 48.8, 50.8 and 52.3 per cent.

Table 4. Expenditures on education, by source of funds
(percentage)

Source of funds	1973-74	1974-75	1975-76 ¹
Governments			
Federal.....	10.2	9.5	9.3
Provincial.....	60.7	63.5	64.9
Municipal.....	20.2	18.7	18.0
Sub-total.....	91.1	91.7	92.2
Fees and other.....	8.9	8.3	7.8
Total.....	100.0	100.0	100.0

¹Preliminary figures.

Dalhousie University, Halifax, NS.



Federal government expenditures on education, apart from transfers for post-secondary education and the minority language program, consisted of the following items in the 1974-75 fiscal year:

Elementary-secondary education	
Indian and Eskimo schools.....	\$ 154,600,000
Department of National Defence.....	\$ 28,700,000
University-sponsored research and military colleges (including capital items).....	\$ 184,800,000
Student aid (including cost of loans and aid given by the Canadian International Development Agency).....	\$ 145,000,000
Manpower (vocational) training.....	\$ 406,300,000
Other expenditures.....	\$ 142,800,000
Total.....	\$ 1,062,200,000

Since expenditures by school boards for elementary and secondary education comprise the largest portion of education cost, the details by source of funds and by province are shown in Table 5.

Post-secondary education accounts for the second-largest amount of educational expenditure. Table 6 shows these expenditures for 1974-75 and 1975-76 by type of post-secondary education and by source of funds.

Table 5. Expenditures of school boards, by source of funds, 1974¹ and 1975²
(thousand dollars)

Province or territory	Year	Government			Fees and other	Total
		Local	Provincial	Federal		
Newfoundland.....	1974	1,076	112,023	6,443	4,565	124,107
	1975	1,165	141,123	5,307	4,920	152,515
Prince Edward Island....	1974	-	29,170	-	80	29,250
	1975	-	34,405	-	90	34,495
Nova Scotia.....	1974	64,661	99,357	764	1,252	166,034
	1975	78,012	111,813	960	2,259	193,044
New Brunswick.....	1974	-	122,782	-	-	122,782
	1975	-	146,380	-	-	146,380
Quebec.....	1974	474,000	1,101,785	9,380	28,185	1,613,350
	1975	468,660	1,309,690	10,400	29,800	1,818,550
Ontario.....	1974	885,389	1,332,796	8,644	34,805	2,261,634
	1975	1,059,611	1,621,299	3,660	34,180	2,718,750
Manitoba.....	1974	111,173	129,993	1,364	5,726	248,256
	1975	131,386	154,613	1,405	2,827	290,231
Saskatchewan.....	1974	92,260	115,319	4,920	2,297	214,796
	1975	100,390	140,495	3,000	3,867	247,752
Alberta.....	1974	190,211	282,165	9,700	11,691	493,767
	1975	225,234	358,969	10,300	10,285	604,788
British Columbia.....	1974	236,677	334,733	6,594	16,187	594,191
	1975	265,589	446,912	14,295	25,581	752,377
Yukon Territory.....	1974	-	7,784	-	58	7,842
	1975	-	7,764	-	75	7,839
Northwest Territories....	1974	296	20,785	-	148	21,229
	1975	727	23,153	-	138	24,018
Canada.....	1974	2,055,743	3,688,692	47,809	104,994	5,897,238
	1975	2,330,774	4,496,616	49,327	114,022	6,990,739

¹ Preliminary figures.

² Estimate.

- Nil or zero.

Table 6. Expenditures on post-secondary education, by type of education and source of funds, 1974-75 and 1975-76¹
(thousand dollars)

Province or territory	Year	Type of education		Source of funds				
		University	Non-university	Total	Federal ²	Provincial	Municipal	Fees and other
Newfoundland	1974-75	47,634	8,354	55,988	5,255	44,152	-	6,581
	1975-76	61,577	9,086	70,663	6,038	57,484	-	7,141
Prince Edward Island	1974-75	8,553	2,760	11,313	740	9,092	-	1,481
	1975-76	9,739	2,860	12,599	875	9,725	-	1,999
Nova Scotia	1974-75	102,991	10,915	113,906	10,599	76,651	-	26,656
	1975-76	112,835	13,167	126,002	10,698	89,802	-	25,502
New Brunswick	1974-75	61,156	5,119	66,275	6,021	48,675	-	11,579
	1975-76	75,290	5,610	80,900	6,431	61,927	-	12,542
Quebec	1974-75	547,859	352,085	899,944	72,542	669,822	449	157,131
	1975-76	719,098	421,360	1,140,458	80,339	905,224	480	154,415
Ontario	1974-75	958,832	253,683	1,212,515	117,842	855,269	583	238,821
	1975-76	1,103,063	299,516	1,402,579	130,114	1,003,843	3,220	265,402
Manitoba	1974-75	124,431	8,775	133,206	14,625	97,831	52	20,698
	1975-76	145,932	11,764	157,696	16,422	119,674	55	21,545
Saskatchewan	1974-75	83,902	10,573	94,475	9,922	68,250	-	16,303
	1975-76	99,241	12,215	111,456	10,480	83,311	-	17,665
Alberta	1974-75	185,284	63,568	248,852	23,668	187,538	29	37,617
	1975-76	235,520	67,120	302,640	25,644	233,614	30	43,352
British Columbia	1974-75	208,771	63,508	272,279	34,674	199,537	63	38,005
	1975-76	246,356	74,934	321,290	37,288	241,182	1,970	40,850
Undistributable ^a	1974-75	42,758	13,068	55,826	55,658	168	-	-
	1975-76	42,642	14,007	56,649	56,443	206	-	-
Canada	1974-75	2,372,171	792,408	3,164,579	351,546	2,256,985	1,176	554,872
	1975-76	2,851,293	931,639	3,782,932	380,772	2,805,992	5,755	590,413

¹ Preliminary figures.² Excludes federal transfer payments to the provinces.³ Includes Yukon Territory, Northwest Territories, overseas and undistributed expenditures.

- Nil or zero.

Leisure

Industrialization and technological progress in Canada have led to high rates of productivity. This in turn has resulted in shorter work weeks, longer paid vacations, earlier retirement and hence more time for leisure and recreation.

Definitions of leisure are numerous and reflect a variety of views. Leisure can be simply defined as those groups of activities undertaken in "non-work" time; it has also been described as that group of activities in which a person may indulge of his own free will—to rest, to amuse himself, to add to his knowledge or skills, to enhance his personal, physical and mental health through sports and cultural activities, or to carry out unpaid community work. However, many definitions of leisure exclude activities such as sleeping, eating, commuting to and from work, household duties and personal care. Formal programs of continuing education may be regarded as personal improvement or maintenance just as much as sleeping or eating and therefore may also be excluded from leisure activity. On the other hand, it can be argued that the allocation of all non-work time is at the discretion of the individual and therefore any part of it is potentially time available for leisure. Nevertheless, most people would agree there is a basic minimum time required for sleeping, eating and personal care that cannot in any sense be regarded as being available for leisure activities.

Despite the fact that there is no precise agreement on what constitutes leisure, there is agreement on a core of activities. These are activities that offer recreation or give pleasure to the participants. Examples would be playing tennis or taking a walk in the park. There are instances of activities that may be regarded as undesired household tasks in some circumstances, yet pleasurable recreational activities in others; such tasks might include mowing the lawn, cooking, dressmaking or house painting. Thus, recreation and leisure may be regarded as qualitative terms that are valued differently according to personal tastes and inclinations. These may vary not only between persons but in different circumstances for the same person.

There is a reciprocal relationship between work and leisure. Longer working hours mean less time for leisure. Additional work time normally provides additional income, while additional leisure time typically leads to increased expenditures. The distribution of time between work and leisure is theoretically a matter of choice, but in practice most employed persons as individuals have only limited freedom in determining how long they work. This is because working hours and holidays in Canada are normally fixed, either by employers or as a result of collective bargaining, according to current legislation and accepted norms. As a result Canadian workers are typically committed to working a fixed number of hours a day and days a week.

The normal work week in Canada is from 35 to 40 hours spread over five working days. Most employees receive at least 10 paid holidays annually and a two-week annual vacation, which is usually extended to three, four or more weeks after several years of service with the same employer. Allowing for weekends, paid holidays and annual vacations with pay, most employed persons in Canada have at least 124 days free from work each year. The net amount of non-work time available to Canadians depends also on the proportion of the population in the labour force



Relaxing in the sun in downtown Toronto.

and whether or not they are employed or seeking employment. Those outside the labour force are by definition non-working and therefore have more free time at their disposal. Typical of these are persons who have retired early or are elderly.

Events and Attractions

Every year, in all parts of Canada, annual events and attractions draw large numbers of vacationers and travellers seeking diversion, excitement and relaxation. Events such as the Quebec Winter Carnival and the Calgary Stampede are organized to promote or celebrate historical, social or cultural occasions. On the other hand, attractions can be either natural or man-made physical features of a permanent nature that provide facilities for displaying distinctive architectural or geographic qualities or for recreational or cultural activities. In this category are museums, parks, mountains and city nightlife; specific examples would be a natural phenomenon like the tidal bore on the Petitcodiac River at Moncton, New Brunswick, or a man-made attraction such as Lower Fort Garry in Selkirk, Manitoba.

Outstanding events take place in each province and territory. One of the oldest sporting events in North America is Newfoundland's annual regatta, held in St. John's. Prince Edward Island's capital city, Charlottetown, features Country Days and Old Home Week, with musical entertainment, agricultural and handicraft displays, harness racing and parades. Nova Scotia events include Highland Games in the centres of Cape Breton, while in New Brunswick there are a variety of festivities

related to the province's fishing resources, such as the Shediac Lobster Festival and the Campbellton Salmon Festival.

In Quebec attractions include Man and his World, Montreal's permanent cultural and ethnic exhibition, and the Sherbrooke Festival des Cantons, which features "Québécois" shows, horse-pulling, soirées and gourmet cuisine. Drama festivals in Stratford and Niagara-on-the-Lake are examples of happenings in Ontario.

Western Canada's events reflect its cultural diversity and pioneering heritage. Examples include the National Ukrainian Festival in Dauphin, Manitoba, and an Oktoberfest in Vancouver, British Columbia. Pioneer Days are celebrated in Saskatoon, Saskatchewan, and Banff, Alberta, has its Indian Days.

Special events are held each summer in the North. In Yellowknife, Northwest Territories, a Midnight Golf Tournament is held each year late in June. In Dawson City, Yukon Territory, the discovery of gold in 1896 is celebrated on Discovery Day in August by raft races on the Klondike River and by dances, sports and entertainment relating to the period.

Climbing the Rockies near Canal Flats, BC.





Ice sculpture at the Quebec Carnival.

Recreation

The types of leisure activities undertaken vary widely according to the age, sex, income and occupation of the individual. A survey by Statistics Canada in 1972 of leisure-time activities showed that in a series of selected physical recreational activities walking was the most popular of all, followed by swimming, hunting and fishing. In recent years bicycling has become increasingly popular with adults and families in many parts of Canada; in 1972 close to 12 per cent of the adult population indicated that they went bicycling regularly.

Every year more Canadians discover the pleasures of winter sports. Survey results have shown that in the winter months the sports that have the most participants are indoor skating, snowmobiling and both downhill and cross-country skiing. The recent growth of trail and cross-country skiing in the winter has to some degree paralleled the growth of bicycling in the summer months. Non-professional hockey is a traditionally popular Canadian sport in which many young people take part regularly. Curling is also a favourite indoor winter sport in most parts of Canada. Other common leisure-time activities of Canadians include home handicrafts, bowling and attendance at movies, sports events, musical performances, exhibitions, fairs and the theatre.



Kluane Lake, YT.

Government Programs

All levels of government play an active role in enriching the leisure time of Canadians and several federal agencies have major programs related to leisure. Among these is the Fitness and Amateur Sports Branch of the Department of National Health and Welfare, which is mainly responsible for recreation and physical fitness programs and which carries out a number of programs aimed at encouraging citizens of all ages to take part in physical fitness activities; it provides financial and consultative assistance to recreational agencies such as the YMCA, boys' and girls' clubs, Scouts, Guides and youth hostels, and it also assists Canada's native people in increasing their participation in sports and recreation. The Canadian Government Office of Tourism assists in advertising our special events and attractions nation-wide and outside Canada. National Museums of Canada promotes interest in and awareness of Canadian heritage and regional variety through the National Museums, the Associate Museums and the Museums Assistance Programs discussed earlier. The responsibilities of Fisheries and Environment Canada include recreational programs such as sport fishing, the conservation of migratory game birds, the provision of interpretive centres on wildlife and the construction and maintenance of wharf facilities for small recreational craft.

For the area in and around Ottawa-Hull, the National Capital Commission plays an important role in conserving and developing space for outdoor recreation. The facilities it provides include Gatineau Park, an area of 357 km² (square kilometres) similar to a national or provincial park, a system of scenic driveways and bicycle paths and a greenbelt of land forming a semi-circle of recreational land to the south of Ottawa; it also maintains the longest outdoor skating rink in the world on the Rideau Canal during the winter and rents out garden plots in the greenbelt during the summer.

The cultural and artistic aspects of recreation are primarily the responsibility of the Secretary of State. This department supports the visual and performing arts and a variety of cultural activities in which it encourages citizens to participate.

Parks Canada

National Parks

Canada's national parks system began with a 26-km² reservation of land around the mineral hot springs in what is now Banff National Park. From this nucleus the system has grown to include 28 national parks that preserve more than 129 500 km² of Canada's natural areas.

Canada's national parks reflect the amazing diversity of the land. The program now extends from Terra Nova National Park, on the rugged eastern coast of Newfoundland, to Pacific Rim National Park, where breakers pound magnificent Long Beach on the west coast of Vancouver Island, and from Point Pelee, Canada's most southerly mainland point, to Auyuittuq National Park on Baffin Island.

There is at least one national park in each province and territory. The mountain parks of British Columbia and Alberta, among the oldest in the system, are noted for their craggy peaks, alpine lakes and meadows, glaciers and hot springs.

At Waterton Lakes National Park, which together with Glacier National Park of the US forms an international park, the mountains rise dramatically from the prairie without the usual transitional foothills. Aspen and spruce forests contrast with the surrounding flat farm land in Elk Island National Park, Alberta. Prince Albert National Park, Saskatchewan, displays three vegetation zones—boreal forest, aspen parkland and prairie—and within the park's boundaries are hundreds of lakes, streams, ponds and bogs. In Riding Mountain National Park, situated on the summit of the Manitoba escarpment, northern and eastern forests and western grasslands form a diverse landscape that shelters a broad variety of plant and animal life.

Campers at Lake Louise campground, Banff National Park, Alta.



There are four national parks in Ontario—Georgian Bay Islands, Point Pelee, St. Lawrence Islands and Pukaskwa. La Mauricie in the Laurentian Mountains and Forillon on the historic Gaspé peninsula are located in Quebec.

Seven national parks in the Atlantic provinces conserve areas of acadian and boreal forest, harsh sea coast and sandy beaches, and the lake-dotted interior of Nova Scotia.

There are now four parks located partially or completely above the 60th parallel of latitude. Wood Buffalo National Park straddles the Alberta-Northwest Territories border and is home to the largest remaining herd of bison on the continent. Kluane, Yukon Territory, contains Mount Logan, Canada's highest peak, while in Nahanni National Park, Northwest Territories, the spectacular Virginia Falls of the South Nahanni River plunge 90 m (metres) to the valley below. On Baffin Island Auyuittuq, which in Inuit means "the place that does not melt", is Canada's first national park above the Arctic Circle.

The magnificent scenery and numerous recreational possibilities of the national parks attract visitors year-round, whether to camp, sightsee, hike, mountain-climb, swim, fish, ski or snowshoe. Interpretive programs include guided walks, displays, films and brochures that explain the natural history of the park regions.

National Historic Parks and Sites

To preserve Canada's past the National Historic Parks and Sites Branch of Parks Canada commemorates persons, places and events that played important parts in the development of Canada. Since 1917, when Fort Anne in Nova Scotia became the first national historic park, 50 major parks and sites and over 700 plaques and monuments have been established at significant sites. Some 30 more sites are currently under development.

Sites are selected on the basis of their cultural, social, political, economic, military or architectural importance and include major archaeological discoveries. Two finds in Newfoundland are the ancient Indian burial ground at Port aux Choix and the Norse settlement at L'Anse aux Meadows believed to have been occupied about 1000 AD.

Many historic parks and sites recall the early exploration of Canada and struggles for its possession. Cartier-Brébeuf Park in Quebec City marks Jacques Cartier's first wintering spot in the New World and is, in addition, the site of the Jesuit order's first residence in Canada.

The pursuit of furs led to extensive exploration of Canada and construction of many posts and forts to expand and protect the fur trade. Such posts include Port Royal, the earliest French settlement north of Florida, Fort Témiscamingue, a strategic trading post in the upper Ottawa Valley, and Fort Prince of Wales, the most northerly stone fort in North America. Lower Fort Garry, near Winnipeg, has been restored to recreate a 19th century Hudson's Bay Company post; here one can see women baking bread and spinning and weaving fabric at the "Big House", a blacksmith at work in his shop and furs, once the mainstay of Canada's economy, hanging in the loft above the well stocked sales shop that was the hub of fort activity.

Military fortifications that have been protected as national historic sites range from the massive Fortress of Louisbourg on Cape Breton Island, built by the French in the 18th century to protect their dwindling colonial possessions, through a series of French and English posts along the Richelieu and St. Lawrence rivers, to Fort Rodd Hill on Vancouver Island, site of three late 19th century British coastal defences.

The fur-trading posts of Rocky Mountain House in Alberta, Fort St. James in northern British Columbia and Fort Langley in British Columbia, where the province's salmon export industry also began, recall the expansion of trade and settlement in the West. The orderly development of western Canada was due in large part to the North-West Mounted Police, who are commemorated at Fort Walsh, Saskatchewan, first headquarters of the force.

The major route to the Klondike Gold Rush is being marked and protected by the Klondike Gold Rush International Historic Park. In Dawson City, the boom town of 1898, the Palace Grand Theatre, the Robert Service Cabin and the paddlewheeler S.S. Keno have been restored, while other buildings are in the process of restoration or stabilization.

Province House in Charlottetown, Prince Edward Island, is a national historic site and at the same time continues to serve as the legislative chambers of the province. The childhood homes of two of Canada's prime ministers, Sir Wilfrid Laurier and William Lyon Mackenzie King, have also been protected. Bellevue House National Historic Park in Kingston, a superb example of the "Tuscan Villa" style of architecture, was once occupied by Sir John A. Macdonald.

On the beach at Prince Edward Island National Park.



Agreements for Recreation and Conservation

The Agreements for Recreation and Conservation (ARC) Program introduced by Parks Canada in 1972 includes projects involving various levels of government and other agencies. It is based on a concept of co-operative planning and management and its long-range aim is to preserve and develop facilities of historical, scenic and cultural significance through agreements among the various agencies involved.

The program's three main components are Co-operative Heritage Areas, Canals and the Canadian Register of Heritage Property.

Co-operative Heritage Areas. In Co-operative Heritage Areas Parks Canada joins with other agencies and levels of government and with individuals in partnership agreements to preserve the heritage character of an area by integrating conservation with contemporary uses. These agreements offer new opportunities to preserve and protect heritage resources. People will participate because they have an interest in conservation and find that a co-operative heritage area provides a more effective means of achieving it, and conservation through partnership will allow participants to achieve individual objectives in a development where costs and responsibilities are shared.

As an example the first ARC agreement, the Canada-Ontario-Rideau-Trent-Severn (CORTS) Agreement, provides for the development of an area that accommodates a variety of recreational and conservational activities along a transportation route that was important in Canada's history.

Canals. Canada's canals were built as defence or trading facilities before the development of railroads and highways. With Confederation the canals came under the jurisdiction of the federal government because of their importance to the trade of the nation.

In 1972 the St. Peters, St. Ours, Chambly, Ste. Anne, Carillon, Rideau and Trent-Severn canals were transferred from the Ministry of Transport to the Department of Indian and Northern Affairs. The transfer was made on the understanding that there should be a shift in emphasis in the management of the canals system, adding historic and environmental preservation and interpretation, recreation and the optimum use of federal lands to their original purposes as transportation routes.

The Canadian Register of Heritage Property. Properties of architectural, cultural and historic value are being lost at an accelerating rate. Under existing legislation Parks Canada can restore and conserve only a limited number of buildings of exceptional national significance; therefore, in co-operation with the provincial and territorial governments Parks Canada will establish a record of significant historic and heritage properties in the form of a Canadian Register of Heritage Property for the benefit of all present and future Canadians. Financial assistance will be made available where justified to owners of properties requiring exterior and structural rehabilitation. Thus, the register will be a means whereby older properties of architectural, cultural and historic merit that constitute an irreplaceable portion of Canada's heritage can be protected, preserved and rehabilitated.

Provincial Parks

Most provinces have set aside vast areas of land for the conservation of the natural environment and the enjoyment of residents and visitors. The areas of provincial parks total about 298 600 km², which when added to the area of the national parks brings the total federal and provincial parkland available per capita to more than 1.6 ha (hectares) for each resident of Canada.

Some of the oldest parks in Canada were created by the provinces. In 1895 the Quebec government's concern for the conservation of the caribou led to the establishment of Laurentide Park, one boundary of which is only 48 km north of Quebec City. In Ontario the first park was Algonquin, created in 1897, which covers an area of 7 540 km² and extends to within 240 km of the city limits of both Toronto and Ottawa; this park, like many of the others in Ontario and the other provinces, features camping, canoeing and sport fishing.

In addition, provincial governments administer a variety of recreational programs, manage natural resources, hunting and fishing and provide recreational facilities, both directly and through municipal programs.

Tourism

Tourism affects the lives of all Canadians. It has an impact on our lifestyle and provides a change of pace from contemporary social pressures. It also contributes to national unity by increasing understanding among people of different regions of the country.

Tourism is a major earner of foreign exchange for Canada. At the same time tourism is a significant generator of domestic spending. It has a considerable impact on consumption, investment and employment and is a source of substantial tax revenue for governments; it also spreads its benefits widely across Canada, playing a prominent role in helping to alleviate regional socio-economic disparities.

According to the World Tourism Organization, global tourism in 1975 involved 213 million international arrivals (up 2 per cent from 1974) and these travellers spent an estimated \$34 billion in their countries of destination (up 17 per cent from 1974). In the world context, Canada ranked ninth in 1975 in terms of international travel receipts and fourth in terms of international travel spending by its residents.

Domestic travel by Canadians increased 48 per cent by volume over the four years from 1971 to 1974 and 84 per cent by value in the same period. This rate of growth for travel by Canadians inside their own country was more than double the rate of growth of the spending in Canada by visitors from abroad, which rose 36 per cent during the period 1971-74.

Despite the energy situation, inflation and world-wide economic recession tourism was a business worth \$8.5 billion to Canada as a whole in 1975, an amount equivalent to about 5.5 per cent of the gross national product. The spending of Canadians travelling within Canada amounted to nearly \$6.7 billion, much the greater part of our tourism overall. The balance of \$1.8 billion was earned from spending in Canada by visitors from abroad—our fourth largest source of foreign exchange after autos and auto parts, crude petroleum and wheat.

Visitors from the United States numbered 34.6 million, down 1.7 per cent from 1974. Non-resident travellers from countries other than the US numbered 1.3 million, an increase of 8.9 per cent over 1974. Of this number 892,400 came from Europe and arrivals from the United Kingdom, the largest source of tourists after the US, totalled 379,700. Visitors from other major tourist-producing countries included 138,000 from the Federal Republic of Germany, 90,400 from Japan, 82,500 from France, 65,300 from the Netherlands, 45,400 from Italy and 41,500 from Australia.

The value of tourism spending in Canada should not, however, be measured solely in terms of the \$8.5 billion direct travel expenditure. Subsequent rounds of spending spread throughout the economy and create additional business.

For example, when a traveller rents a hotel room he contributes in the first instance to the gross margin of the hotel owner. Part of this margin will be paid out to employees in the form of wages. These wages will subsequently be spent to the benefit of the owner of a corner store, for example. The money will then pass to the wholesaler who supplied the goods purchased and then to the manufacturer, who in turn probably purchases his raw materials from another Canadian firm, and so on. Counting this "multiplier" effect, the total contribution of tourism in the GNP could have been as high as \$15 billion in 1975.

Tourism also generated the equivalent of 800,000 jobs across Canada in 1975—about 7 per cent of the labour force. It involved governments at every level and almost 80,000 individual private enterprises of diverse kinds, such as transportation companies, accommodation operators, restaurateurs, tour wholesalers and operators, travel agents, operators of activities and events, and trade associations.

Another important feature of travel consumption in Canada is the low import content of the products consumed. As travel is predominantly service-oriented, travel spending is on goods and services with a relatively high domestic labour content. Furthermore, the goods purchased by tourists are usually home-produced—food and drink by Canadian farmers and processors and souvenirs by Canadian craftsmen, for example.

The growth of tourism in Canada is no accident. Canada possesses many basic tourism assets. It has an enviable location at the crossroads of the northern hemisphere and adjacent to the world's most affluent travel market. It is endowed with an abundance of open space, for which world demand is sure to intensify. Its northern territories constitute one of the world's few remaining tourist frontiers. It possesses immense supplies of a most precious recreational resource—water—and of a most promising one—snow. The variety, quantity and quality of Canada's wildlife compare favourably with those of any country. Its scenic, cultural and ethnic diversity add to its travel appeal, as do its heritage buildings and the developing attractions of its major cities.

Above all, Canada enjoys a world-wide reputation for friendliness and hospitality. But the growth of tourism also reflects the efforts of 10 provincial tourism departments and two territorial tourism departments, the services and promotion effected by the thousands of businesses catering to Canadian tourism and the work of the Canadian Government Office of Tourism.



Receipts and payments on travel between Canada and other countries, 1971-75
(million dollars)

Country	1971	1972	1973	1974	1975
United States					
Receipts	1,092	1,023	1,160	1,328	1,337
Payments	898	919	1,073	1,196	1,587
Balance	+194	+104	+87	+132	-250
Other countries					
Receipts	154	207	286	366	478
Payments	550	545	669	782	955
Balance	-396	-338	-383	-416	-477
All countries					
Receipts	1,246	1,230	1,446	1,694	1,815
Payments	1,448	1,464	1,742	1,978	2,542
Balance	-202	-234	-296	-284	-727

Marble Canyon, Kootenay National Park, BC.



Science and Technology

Canada's gross expenditure on research and development (GERD) in 1974 approximated \$1.7 billion. This placed Canada sixth on the list of the 24 member countries of the Organization for Economic Co-operation and Development (OECD) in terms of total expenditures on these activities. Expressed as a proportion of gross national product, Canada's GERD was 1.2 per cent.

The average growth of Canada's annual expenditure on research and development was 18 per cent during the period from 1963 to 1967. It declined to 10 per cent from 1967 to 1969 and to 8 per cent from 1967 to 1971. Between 1971 and 1974, research and development funding grew at an annual rate of 9.6 per cent. Together with the United States, France and the United Kingdom, Canada has experienced a marked levelling-off in the support of science and technology since the period of rapid growth in the early 1960s.

Approximately 40,000 scientific, technical and operational personnel were engaged in research and development in the government and industrial sectors in Canada during 1974.

Science Policy

"A nation needs a comprehensive and consistent policy for the support and advancement of science, because there are more opportunities to advance science and technology than there are resources available to exploit them all. Government authorities who are subjected to continuing requests for support from industry, universities, scientific institutions, individual scientists, graduate students and international scientific organizations, as well as from consumers of science within various departments and agencies of government itself, need guidance on how to allocate their funds and their trained manpower. The purpose of a national policy for science is to provide such guidance." (OECD, 1963.)

The Ministry of State for Science and Technology

The Ministry of State for Science and Technology, created in 1971, encourages the development and use of science and technology in support of national goals through the formulation and development of appropriate policies.

Canada needs policies for science to ensure that scientific tools will be available. The provision of grants in aid of research through the National Research Council, the Medical Research Council and the Canada Council are an expression of a policy for science that is aimed at generating and maintaining national research capability.

Policies are also needed for the use of science to help Canada achieve non-scientific aims using scientific tools. The maintenance of research laboratories by science-based government departments (such as Energy, Mines and Resources, National Health and Welfare, Agriculture, and Fisheries and Environment) is an expression of science policy. The recently instituted Make-or-Buy policy, whereby federal departments are required to purchase new research requirements from non-government research facilities where possible, was designed to enhance the

capability of Canadian industry to perform research; this is another example of science policy, in this case to reach economic goals.

The integration of science into public policy formulation is a relatively new development and is the third element of science policy. Mechanisms that the Government of Canada is using to bring science into policy include the recruitment of both natural and social scientists into the federal public service at the policy-making level and the use of consultative mechanisms such as Royal Commissions and Task Forces.

The Science Council of Canada

The Science Council of Canada, a quasi-independent body that advises the government on science policy by the publication of reports on subjects of current importance, published its 11th Annual Report in June 1977. In July 1976 it published a report entitled *Population, Technology and Resources*, and since that time it has also released four background studies: *The Role and Function of Government Laboratories and the Transfer of Technology to the Manufacturing Sector*; *The Political Economy of Northern Development*; *Mathematical Sciences in Canada*; and *Human Goals and Science Policy*. Issue 3 was published in June 1976 and Volume 2 of *Perceptions*, on the implications of the changing age structure of the Canadian population, was also released that year.

Science and Technology in Government

Total expenditures on science and technology by the Canadian government were estimated to have reached \$1,500 million in 1976, or 4 per cent of the total federal budget. This represented an increase of 13 per cent over the preceding year. The natural sciences received 77 per cent of the total and the human sciences 23 per cent. Some 64 per cent of the expenditure of \$1,500 million was devoted to research and development. The remainder covered other scientific activities such as seismic and magnetic surveys and the collection and dissemination of data and statistics.

In 1976 the National Research Council spent more on research and development than any other federal department or agency. Its estimated expenditure of \$167 million represented 17 per cent of the government's research and development budget. Government spending on related scientific activities in 1976 was mainly attributable to Fisheries and Environment Canada and Statistics Canada, which together were responsible for half the total expenditure in this category.

Government expenditures are generally classified under 11 headings: general government services, foreign affairs, defence, transportation and communications, economic development and support, health and welfare, education assistance, culture and recreation, fiscal transfer payments, public debt and internal overhead expenses.

In 1976 government expenditures on scientific activities, a total of \$1,500 million, fell under nine of these headings. The greatest part of science expenditures was related to economic development and support, with transportation and communications and health and welfare close behind.



Checking instruments at a gas plant at Judy Creek, Alta.

Science and Technology in Canadian Industry

Canada's competitive position in technology-intensive manufactures remains a serious concern. A number of factors, such as restraints caused by inflation and slow growth, the tendency of many foreign-owned companies to perform research and development in the home country and limited domestic markets are among the influences producing this situation. The federal government has a number of programs designed to encourage Canadian industry to perform research and development leading to innovative products or processes that could benefit Canada domestically and make us competitive in the international marketplace.

Among these measures is the contracting-out policy (Make-or-Buy) initiated in 1973, which is designed to encourage the fullest possible participation of industry in scientific and technological programs of federal government departments and agencies by contracting out mission-oriented research and development to industry. In 1974 the original policy was augmented by the introduction of provisions for research and development proposals related to departmental missions to be initiated by industry (the so-called Unsolicited Proposals).

An evaluation of the contracting-out policy was undertaken in 1975 and was published late that year ("Make-or-Buy 1973-1975"). On the basis of this evaluation it was decided that the policy should be extended to include on-going research programs, related scientific activities and certain activities in the field of human and social sciences. By enlarging the policy to encompass all scientific activities the government seeks to give further emphasis to industrial participation in its science-

based programs; this includes a number of important science programs now emerging in such areas as ocean management, space, transportation, environmental protection, food and energy. This extension of the contracting-out policy re-affirms the fact that the achievement of a more even balance between government in-house research and development and the industrial share of government science programs is a principal policy objective. By March 31, 1977, research and development worth approximately \$240 million had been contracted out to industry under this program.

Expenditures on industrial research and development in Canada are estimated to have been \$640 million in 1974, \$75 million of which were payments outside of Canada. Sixty-nine per cent of this was funded by industry itself and 15 per cent by the federal government. The total value of industrial research and development was expected to rise to \$700 million in 1975 and \$760 million in 1976.

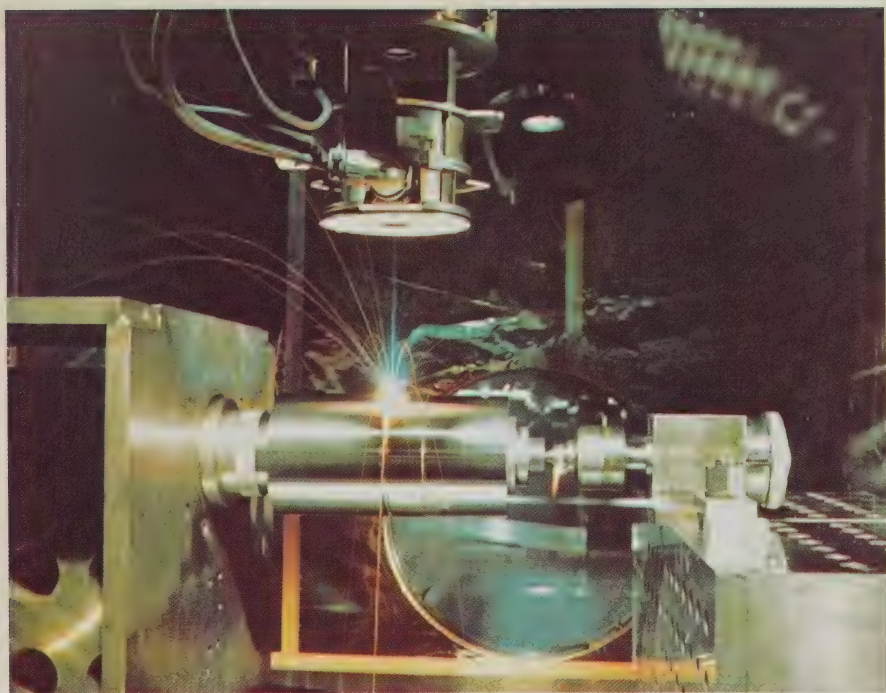
University Research

Direct federal support in aid of research and development in Canadian universities in the fiscal year ending March 1977 was estimated at \$174 million, an increase of 5.6 per cent over 1976. Of this total, some \$25 million went to the human sciences, 17 per cent more than in the previous year. This maintained the growth differential of recent years in favour of the human sciences. The three research councils—the National Research Council, the Medical Research Council and the Canada Council—distributed some 78 per cent of federal grants for university research. Support for related scientific activities, mainly support of education in the form of scholarships, amounted to an additional \$32 million, bringing the total federal support in aid of scientific activities carried out at universities to some \$207 million.

Over the six-year period ending in 1976-77, direct federal expenditures on scientific activities in the university sector rose by 6.4 per cent, from \$142.2 million to \$206.5 million; however, in terms of constant prices the total has declined over this period. At the same time the provinces have been reimbursed for approximately half of the operating costs of all post-secondary institutions—an expenditure that has grown during this period at a rate exceeding the rate of inflation—and the indirect costs of research are included in these operating costs. Also, the relatively lower growth rates of the 1970s follow the period of the 1960s during which federal expenditures to the university sector grew at an annual rate of over 30 per cent in nominal terms and over 25 per cent in real terms.

During the 1970s, federal research and development expenditures for universities have grown much more slowly than provincial and other sources' expenditures for this purpose. This is a reversal from the growth patterns of the 1960s. In effect, non-federal sources have compensated the universities for the reduction in the growth of federal contributions to the extent that research and development contributions to the universities from all sources combined have just about kept pace with the rate of inflation.

Of the funds going to the university sector, the portion designated for research and development has grown less rapidly than spending on related scientific activities. In particular, expenditures on research and development in the Natural Sciences have been growing less rapidly than other expenditures.



Use of a high-energy, tightly focused beam of electrons in a hard vacuum for industrial welding is an example of technology developed at the National Research Council.

Science and Technology in International Affairs

Science is basically international, and traditionally there have always been numerous informal contacts between Canadian scientists and their opposite numbers in other countries, particularly those employed in non-governmental organizations such as universities and industry. Canadian scientists also participate widely in international conferences on specialized scientific and technological topics, and Canada frequently hosts such meetings. This privately-organized international co-operation is complemented on the official level by scientific and technological co-operation between the Canadian government and its agencies and their foreign counterparts and other non-governmental international scientific organizations. Thus Canada has bilateral agreements of various kinds with several countries for collaboration in specified technical fields. These agreements provide for the exchange of information or scientists and, in some cases, co-operative scientific projects. Such co-operation may also proceed on an ad hoc basis in the absence of formal agreements. A network of science counsellors in several of the more important Canadian embassies plays a key role in establishing and maintaining these relationships.

Canada also participates in the work of a number of multilateral agencies with scientifically-oriented activities; these include the North Atlantic Treaty Organiza-

tion, the United Nations, the Organization for Economic Co-operation and Development, the Economic Commission of Europe and the Commonwealth. The work of various international bodies (e.g. the Club of Rome) that endeavour to apply scientific techniques to the clarification of global problems is also followed very closely. Indeed, Canada played a substantial role in the creation and support of the International Institute of Applied Systems Analysis in Vienna, which was created for the development and application of systems analysis and modelling.

Much of the emphasis in international science and technology is currently being concentrated on the transfer of technology to less-developed countries and its application to the solution of their problems. In response to this trend Canada is playing an important role in the United Nations Conference on Trade and Development and is preparing to participate actively in the United Nations Conference on Science and Technology for Development, which will be held in 1979. The Canadian government has also set up the International Development Research Centre, an autonomous body supported by public funds, whose role is to initiate and support research into the problems of the developing regions of the world and to encourage co-operation between research workers in those regions and scientists in Canada and other developed nations.

Scientific Activities

The following are some of the highlights of Canadian research, development and other scientific activities in major areas of national interest.

Agricultural Research

Over 50 per cent of agricultural research in Canada is conducted by Agriculture Canada, which employs over 900 scientists at about 50 establishments located from coast to coast. Agriculture faculties at universities comprise the second major research group. Private industry and provincial departments have been minor contributors in the past, but are becoming more significant. At all establishments there are probably 2,000 scientists involved, although many of them devote only a portion of their time to agricultural research.

The broad traditional areas of crop production, animal production and soils still receive the bulk of the research effort, but in recent years there has been increasing emphasis on food processing. In addition, agricultural scientists are now becoming involved in research directed at protection of the environment, an activity frequently conducted in collaboration with other agencies at the provincial, federal and international levels.

In crops research, plant breeding is a major activity. New varieties are selected for such traits as higher yield, better product quality, resistance to disease and insects, and shorter season. In the past one or two years at least a dozen new cereal varieties, several new forage legumes and grasses, and some new oilseed varieties have been licensed. Plant breeders have also made dramatic progress in altering the chemical composition of rapeseed, which is our major oilseed crop; erucic acid, which was a major component of rapeseed oil, has been virtually eliminated from new varieties, as have glucosinolates, which interfered with utilization of the meal. New varieties

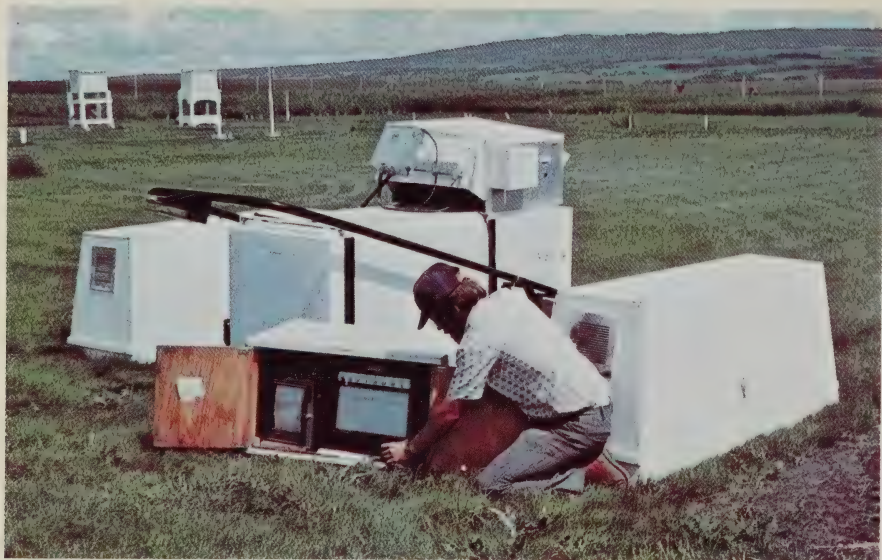


Automatic vaccination equipment at a chick hatchery at New Hamburg, Ont.

of a number of fruits and vegetables have also been released, including potatoes, cucumbers, tomatoes, apples, peaches and cherries.

The other major activity in crops research is the development of better means of protection against insects, diseases and weeds. Chemical pesticides are one of the major means of plant protection, but scientists have reduced the number of sprays required by timing them so that they are applied when they are most effective. Biological methods of control have also been developed; such methods include use of insects to control other insects and weeds and of pheromones and sterile male techniques to disrupt insect reproduction. The integration of chemical and biological controls reduces both costs and the risks of environmental pollution. In addition, engineers have developed spray equipment to reduce drift and achieve more effective application.

The Food Research Institute of Agriculture Canada has developed new procedures for recovering protein from whey and has assessed at the pilot plant level the economic and commercial feasibility of processes for the production of protein concentrates from rapeseed and mustard. Pilot plant facilities are now available to industry, university and government researchers in Canada for engineering studies on grains and oilseeds. Industrial interest continues in the fractionation and utilization of components of Hinoat, the high-protein oat variety developed at the Ottawa Research Station. Continuing food research programs seek new uses for Canadian agricultural products and provide information to plant and animal breeders to help improve quality.



A field freezing unit designed at Agriculture Canada is used to test the cold-hardiness of crops under actual growing conditions in the Peace River district of Alberta.

At Winnipeg, the Grain Research Laboratory of the Canadian Grain Commission monitors and assesses the quality of cereal grains and oilseeds grown and marketed in Canada and carries out research on grain quality.

In animal production, breeding projects are under way with sheep, swine, poultry and cattle, conducted mainly by Agriculture Canada. The department has one of the largest research projects on dairy cattle breeding in the world, a project designed to test the feasibility of exploiting hybrid vigour in dairy cattle. At the present time the dairy cattle industry relies heavily on a single breed, the Holstein.

Three British breeds, Hereford, Angus and Shorthorn, have long been the basis of Canada's beef production. In the last decade, ranchers have imported various other European breeds for crossbreeding purposes. Agriculture Canada has a large breeding project to test and assess the value of these imported breeds when crossed with the traditional British ones.

Research on reproductive physiology is also being used to improve livestock productivity; an Agriculture Canada program is having excellent success in developing potential areas for major breakthroughs in animal reproduction.

Research on animal diseases is conducted by the Health of Animals Branch of Agriculture Canada and by staff members of three veterinary colleges. Continuing studies are aimed at improving present techniques or developing new methods to diagnose animal diseases rapidly and accurately. Among the research work under way currently are studies of respiratory disease of cattle, a serological test for diagnosis of bovine leukosis, methods for rapid diagnosis of swine vesicular disease and an evaluation of procedures for isolating the virus that causes bluetongue disease in cattle, sheep and goats. Attention is also being focused on procedures for the accurate identification of poultry infected with the virus of lymphoid leukosis.

In another area of research, bovine embryos have been collected non-surgically, sexed at 12 days and maintained in frozen storage.

Soils research is concerned with basic work on soil reactions, on a soil survey to provide information on the soil resources of Canada and on fertilizer practices for various crops. Land capability studies are becoming increasingly important because of urban encroachment on prime agricultural land and the looming world food shortage.

Concern for environmental quality is a new thrust in agricultural research. Scientists are monitoring rivers, streams and lakes for contamination by soil nutrients, animal wastes and pesticide chemicals. Food products are carefully checked for freedom from chemical residues. Analytical methodology to permit this monitoring is continually under development.

Solutions to economic problems in agriculture also require research. Research by the Economics Branch of Agriculture Canada is aimed at identifying the economic problems of the industry and helping formulate programs and policies to solve them. The branch carries out studies of farm management, resource use, farm income, market structure and agricultural productivity and assesses the effect on agriculture and the economy of such changing conditions as prices, trade and technical developments. Economic models have been established to evaluate specific programs and policies for grains, oilseeds, cattle, hogs and dairy products. In addition, farm management planning models have been developed for all regions and types of farms in Canada.

Environmental Research

Atmospheric Environment Service Research. Pollutants such as freons and supersonic transport exhausts affect the stratosphere, especially the ozone layer, and lead to potentially harmful effects on human, animal and plant life. Important stratospheric constituents are being measured by the Atmospheric Environment Service of Fisheries and Environment Canada to establish the current unperturbed stratospheric photochemical balance and to verify photochemical reaction rates needed for input to models of stratospheric behaviour. These models indicate that the effects of pollution are not negligible.

Climatic trends that may gravely affect agricultural production and other environmental factors bearing on human welfare are also being analyzed to discover the basic physical processes required to make long-term predictions of climate. A comprehensive system for environmental prediction through forecasts of ice masses and ice floes and of weather elements is operating and being developed further to support many activities going on in the Arctic, especially oil drilling in the Beaufort Sea. New, powerful techniques of data assimilation and numerical prediction are in operation at the Canadian Meteorological Centre and improvements are still being made. Advanced computer methods for processing satellite data are producing very high quality photographs of weather systems for use at Canada's main weather centres.

Methodologies are being developed for conducting air quality environmental impact assessments of major industrial developments and of energy production and

transportation activities, in order to provide information relevant to land use planning and air pollution control strategy that would minimize any adverse effects.

Fisheries and Marine Programs. Bounded by three oceans and having the longest coastline of any country in the world, Canada conducts an extensive range of scientific programs aimed at probing the secrets of the seas and their vast and valuable resources. Responsibility for Canadian fisheries, oceanographic and hydrographic research and surveys is entrusted to the Fisheries and Marine Service of Fisheries and Environment Canada.

(a) **Fisheries:** Programs of fisheries research directly supporting national and international fisheries activities are conducted from Fisheries and Marine Service research stations located in coastal and inland areas across Canada. These programs are designed to add to the fundamental knowledge of Canada's vast living marine and fresh-water resources. Life history, population and behaviour studies provide a sound scientific basis for the conservation and management of some marine plants, such as phytoplankton and seaweeds, and of the commercially important fisheries, including those for lobster, crab, shrimp, oyster, scallops, clams, marine mammals, salmon, cod, flounder, halibut, herring and capelin. Studies on fish predators and fish and shellfish diseases, and research on fish genetics, physiology and behaviour are also important, the latter with a view to improving fish culture and farming methods and fish farm and hatchery stocks. In addition to these basic studies, new fishing grounds and new species for exploitation are sought and experiments in improving fishing methods are undertaken.

The aquatic environment program takes in studies of the marine and fresh-water environments of aquatic organisms in order to learn more about primary and secondary productivity and the occurrence of ocean and fresh-water life of importance to man. Considerable importance is placed on increased research efforts associated with the prediction, abatement and elimination of pollution, including the effects of fresh-water and marine eutrophication. Investigations are also conducted into the distribution and physical and chemical characteristics of major ocean currents and the physical and biological structures of large ocean areas, including the ocean bottom, where concentrations of fish and other aquatic life occur. Ocean climate and ocean weather as they affect the distribution of fish and other living organisms, as well as the vertical and horizontal distribution of nutrient matter and the cycle of energy and life in the seas, are regularly observed and correlated.

(b) **Oceanography:** A principal objective of oceanography is to contribute to the understanding, exploitation and management of renewable and non-renewable ocean resources. To achieve this a broad spectrum of programs is conducted in coastal and deep ocean waters to examine the physical, chemical and biological processes that, in combination with atmospheric interaction, govern much of the sea's behaviour. This work has given new insight into key areas such as the productivity and sensitivity to pollution of our marine waters. It also helps support fisheries and ocean legislation, provides a basis for marine information and advisory services and assists in expressing Canada's position in international forums dealing with the health and use of the world's oceans.

Programs are centred mainly in three regional establishments—the Bedford Institute of Oceanography at Dartmouth, NS, the Institute of Ocean Sciences at



A new oceanographic centre on Vancouver Island, BC.

Patricia Bay, BC, and the Canada Centre for Inland Waters at Burlington, Ont. The Marine Environmental Data Service in Ottawa acquires, records and disseminates oceanographic data on a world-wide basis and also provides data and information services.

Visible benefits of these research programs are apparent in the growing level of scientific and technological expertise in the marine sciences and in marine-oriented production and services. This development has been marked by close co-operation between government and private enterprise. A typical example is the Canadian Ocean Data Buoy System, designed to augment the observational network that will aid both local and long-range weather forecasting. Another case in point is the Beaufort Sea Program, undertaken in the year 1974-75; this was a major marine environmental assessment program related to the possible environmental impact of offshore exploration for oil and gas in the southern Beaufort Sea.

Considerable emphasis is given to the control of pollution at sea and development of legislation dealing with our continental shelves. One example is the Ocean Dumping Control Act, which came into effect late in 1975 and permits Canada to manage an activity that was largely unregulated in the past. Proclamation of this statute enabled Canada to become party to an intergovernmental agreement whose purpose is to control the dumping of wastes at sea.

(c) Hydrography: The Canadian Hydrographic Service publishes nautical charts to ensure the safety of navigation on Canada's coasts, the major inland water routes and the adjacent oceans. One thousand charts, 16 volumes of sailing directions and annual tide tables are published. Multidisciplinary surveys are carried out jointly with the Department of Energy, Mines and Resources, and over 200 natural resource maps showing magnetics and gravity data and the surficial geology of the

continental margin have been published. Canada is a member of the International Hydrographic Organization and has published three small-scale charts in the International Chart Series; also in production are the first four sheets of the International Bathymetric General Chart of the Oceans.

Environmental Protection Service Research. The Wastewater Technology Centre in Burlington, Ont., is charged with the conception, development and implementation of technical development programs related to water pollution control of industrial and municipal waste waters across Canada. Studies are made and field demonstration projects are conducted at industrial sites.

Current projects on the treatment of municipal waste waters include: the development of systems for the removal of nutrients, particularly phosphorus and nitrogen; the application of physical/chemical or biological waste-water treatment systems to small communities; the de-watering, handling and disposal of sewage sludges by incineration or by application to agricultural land; and investigations of existing sludge disposal sites for heavy metals and polychlorinated biphenyls (PCBs). For the treatment of industrial waste waters, current projects include: development and demonstration of a physical/chemical treatment process for removing arsenic and cyanide from gold mining and milling waste waters; biological removal of nitrogen from various industrial waste waters, removal of toxic metals from metal-bearing waste waters, removal of radioactive products from industrial waste waters and the leachability of radioactive materials from uranium mine tailings; a study of the parameters influencing the de-waterability of various industrial sludges; and the evaluation of the effect of various treatment processes on the toxicity of various organic chemical plant effluents.

The Environmental Emergency Branch is studying cold-weather environmental problems, such as drilling blowouts in the Arctic, winter pipeline spills, dyking of storage facilities in the North and spills in ice-infested water. The branch is also involved in technology development work for controlling and cleaning up accidental pollution. It tests, evaluates and develops oil-spill counter-measures equipment, materials and techniques; this program includes the use of skimmers, booms, pumps and remote sensing systems. Work is also under way on various oil-spill treatment agents, such as absorbents, biodegraders, combustion agents and chemical treatments, and on the analysis of counter-measure requirements for specific high-risk and sensitive areas.

The Environmental Contaminants Act, officially proclaimed in April 1976, is administered by Fisheries and Environment Canada, with the Department of National Health and Welfare having a joint responsibility for the control of contaminants. Designed to protect human health and the environment from substances that contaminate the environment, the Act enables the federal government to request information on the quantities of certain substances being manufactured, imported or processed. The purpose of this is to ascertain whether any of these substances are entering, or are likely to enter, the environment in quantities that might constitute a danger to human health or the environment.

Environmental Management Service Research. Research in this arm of Fisheries and Environment Canada is undertaken by the Canadian Forestry Service (CFS), the Canadian Wildlife Service (CWS), the Inland Waters Directorate and the Lands Directorate.



The sawmill at Adams Lake, BC.

The CFS has taken a leading role in establishing a task force to monitor large-scale aerial forest spraying operations in Quebec and New Brunswick. This task force is co-operating with the provinces in assessing possible environmental side effects of spraying operations in 1977. Successful experiments to evaluate satellite (Landsat) imagery for forestry purposes have led to a large remote-sensing contract, which in turn is expected to yield better procedures for resource inventories and environmental monitoring projects. The CFS has also fostered large-scale operational tree-breeding programs in Nova Scotia, Quebec, Ontario, Alberta and British Columbia that will provide faster-growing, superior trees to help offset predicted wood shortages.

Among many other important forestry research ventures are programs designed to improve the environment by establishing modified forestry operations and by abating air, water and land pollution caused by forest industries.

The CWS is continuing its efforts to protect rare and endangered birds such as the whooping crane and the peregrine falcon. Attempts are being made to breed a new whooping crane population in Idaho using eggs from Wood Buffalo National Park; the results of two years' work indicate that the technique is successful, but the final outcome will not be known for some years. CWS also hopes to increase falcon numbers by raising birds in captivity and releasing them into the wild across Canada. Research in the Northwest Territories has included population studies on the Peary caribou and barren-ground grizzly bear, species regarded as being especially sensitive to the disturbances associated with oil and gas exploitation in that area.

Other significant work includes monitoring the effects on songbirds of aerial spraying for spruce budworm, researching the impact of toxic chemicals in Lake Ontario on the reproduction of herring gulls, photographically enumerating

breeding colonies of lesser snow geese and Ross' geese in the western Arctic and determining habitat and reproduction requirements of white-fronted geese.

Most of the Inland Waters Directorate's research program takes place at the Canada Centre for Inland Waters at Burlington, Ont., and in Hydrology and Glaciology Research divisions in the National Capital Region; there are also small research groups in Winnipeg, Calgary and Vancouver. Research is concerned with water quality and water quantity problems.

Water quality research provides a basis for setting water quality objectives. Specific projects include: eutrophication and nutrient dynamics at work in the Bay of Quinte and Lake St. George; toxic substances research covering identification of problem substances, bacterial degradation of contaminants and asbestos detection and removal; studies of transport and pathways of pollutants through the water environment; and investigations of ground-water contaminants, particularly radioisotopes.

Water quantity research covers physical exchanges at the air/water (ice) interface and forecasting of the physical effects of water and ice on the environment. Specific projects include: bank and bed stability at northern river crossings; studies of Arctic lakes; glacier coring for interpreting climatic history and predicting future trends; and models of river and shore processes such as erosion and ice scouring.

Land classification and land use change are the principal subjects of the Lands Directorate's current research activities. Land classification research is directed toward establishing better methods of surveying and classifying land according to ecological characteristics, use capabilities and present use. Such techniques are used in major resource investigations to determine land development potential and environmental management requirements. There is also research emphasis on satellite imagery and high-altitude aerial photography for land resource surveys and land use monitoring systems. Land use change at the fringes of urban centres is another important area of investigation; this work covers rural-to-urban conversion around centres with 25,000 or more people.

Energy, Mines and Resources

Mining and Metallurgical Research. The Mining Research Laboratories of the Department of Energy, Mines and Resources are in the process of publishing the *Pit Slope Manual*, the result of a five-year industry-government co-operative research and development program. The manual details the engineering procedures required to optimize the layout of an open pit mine. Use of these procedures is expected to substantially reduce the amount of mine waste, with cost savings to the industry of at least \$50 million annually. Mining companies have welcomed the manual enthusiastically and several are already implementing its recommendations.

The Canada Centre for Mineral and Energy Technology (CANMET) has undertaken a program of scientific activities aimed at developing and disseminating the knowledge needed to assure the health and safety of workers engaged in all stages of mining, milling and refining operations that are conducted to recover naturally occurring radioactive materials; the health and safety activities include investigation of occupational hazards, development of protective measures and disposal of wastes in an acceptable manner. Radioactivity is the principal but not



A geologist checks drill core at Leaf Rapids, Man.

the only concern; exposure to silica dust and surface disposal of tailings with a high acid load are being considered at the same time. The program will also be useful to other mineral extraction operations.

CANMET is also involved in a number of processing projects aimed at developing new technology that will increase the value added in converting minerals to products, in order to ensure availability of Canadian supplies of strategic materials and promote the recycling of waste and substitution of abundant materials for scarcer ones.

Research and development (R&D) in extractive metallurgy is aimed at improving existing processes and developing new ones, especially processes for the treatment of domestic ores whose complex mineral content makes them unsuitable for conventional processing; for example, complex sulphide ores containing lead, zinc, copper and iron occur at several locations in Canada. Research is being undertaken to develop a new extraction process that will increase recovery and make pollution control easier.

Samples of large deposits of complex iron ores from the Peace River district of Alberta are being investigated to determine whether economical beneficiation and smelting processes can be developed. Other research is being conducted on the recovery of iron and by-products from titaniferous magnetites from Quebec and on the combined use of coal and electric smelting as a method of producing pig iron in relatively small amounts where blast furnaces may not be economical.

In co-operation with industry through the Canadian Carbonization Research Association, CANMET has undertaken research to improve the quality of coke used in blast furnaces, thus reducing energy requirements and air and water pollution in the coke-making process. Investigations also provided data on coking properties for domestic and export customers and on the best ways to use Canadian coking coals.



An experimental wind generator near Regina, Sask.

As part of its metallurgical research CANMET continued a major program on the assessment of steels for use in large northern pipelines, in which the prevention of cracks is of great concern. Characteristics studied included fracture toughness, weldability and corrosion resistance.

Wear of metal parts is a continuing problem in many mining and processing operations, and one CANMET project is aimed at developing improved materials to resist wear in oil sands recovery. Other projects are concerned with the use of materials in transportation and include the processing of alloys that could reduce the weight of automobiles and research on the improvement of railway rails.

Research in Energy Supply Technology. A major area of energy supply technology R&D is the mining of coal in the mountainous areas of western Canada; severely folded and faulted coal seams restrict the use of conventional coal-mining techniques and create difficult ground support problems. Coals from the western plains are of low rank and also pose specific development problems. As a consequence, a multi-faceted development program involving coal quality, coal mineability, coal mining technology and safety, and coal beneficiation is being undertaken within CANMET's Energy Research Program. This effort contributes to the development of supplies of coal for various applications in the short term and beyond. These programs represent an annual expenditure of \$2 million.

Surface mining is proceeding on the highest-grade, most accessible oil sands deposits near Fort McMurray, Alberta; at the same time the oil companies, with the co-operation of AOSTRA (Alberta Oil Sands Technology and Research Authority) and a \$100 million Alberta government fund, are developing in-situ technology to recover up to 15 per cent of the bitumen from oil sands that are overlain by 2 300 m

(metres) or more of overburden. However, over half of the oil sands are too deep to be exploited by surface mining and not deep enough for in-situ technology. Therefore, in 1976 CANMET initiated feasibility studies to assess the potential for adapting and developing underground mining technology that may be applied to the recovery of up to 90 per cent of the bitumen content.

The Department of Energy, Mines and Resources takes an active working role in resource and reserve assessment of Canada's uranium potential through its Geological Survey and the Mining Research Laboratories of CANMET. This is done in co-operation with the mining industry.

Fuel Processing Research. Once the oil sands have been mined, the bitumen must be removed from the sand. During 1976 a successful small-scale "cold water" separation system was developed by CANMET in co-operation with industry; the process has the potential of considerable energy saving, water conservation and pollution reduction compared to present processes that use hot water. Other separation systems are also being considered, with the aim of making it possible to select processes that yield maximum liquid fuel for a minimum expenditure and environmental impact.

A major economic cost and operating difficulty associated with oil sands processing is the production of coke, which plugs and fouls the refining equipment. Recent research has led to a greater understanding of this process and to the development of a means of significantly reducing coke formation. This research effort doubled in the year 1976-77.

Because of the expected decline in conventional oil supplies in the short term it has become apparent that more measures must be taken to substitute coal in

The oil-fired generating station at Charlottetown, PEI.



applications previously employing oil and gas. A major way in which this can be done is by converting coal to gaseous and liquid fuels. In 1976-77 CANMET expanded its staff to begin coal conversion R&D within the branch and to provide scientific supervision of the department's contracts with the private sector, which were expected to total \$1 million in the fiscal year 1977-78.

Private companies (Eldorado Nuclear, Rio Algom Mines and Denison Mines) carry out R&D associated mainly with the operational problems of uranium processing and the development of improved processes. Efforts within CANMET have concentrated on the problems of extracting radioactive minerals using bacterial leaching techniques on low-grade and complex ores. In addition, emphasis has been placed on treatment of uranium mine tailings in order to reduce their negative impact on the environment.

Fuel Conservation Research. Following CANMET's successful development of a blue-flame domestic oil burner, contracts were initiated in 1976 for the production of two prototype furnaces incorporating the new technology. They will be used for evaluation and certification and it is hoped they will form the basis for commercial development of a new domestic furnace of superior efficiency.

Other studies are in progress to improve the efficiency of existing technology for the combustion of coal for power generation and industrial processes and to develop advanced combustion systems. One of these, fluidized bed combustion, promises increased efficiency, reduction of pollution and the ability to burn a wide range of low-grade fuels that are at present discarded.

Finally, through contracts with industry, automobile engines of various types and with various auxiliaries are being studied to determine how Canadian climatic conditions affect fuel consumption and pollution emission.

Energy Research. Estimated expenditures of \$128 million on energy R&D by the federal government in the fiscal year 1976-77 were distributed approximately as follows: nuclear energy, 73 per cent; fossil fuels (oil, gas and coal), 11 per cent; energy conservation, 7 per cent; energy transportation and transmission, 5 per cent; and renewable energy resources, 4 per cent.

In the year 1977-78 the federal government spent about \$10 million, in addition to the normal budget, to increase energy R&D activities in four priority areas, distributed as follows: energy conservation, \$4.5 million; renewable energy resources, \$3.5 million; fossil fuels, \$1.5 million; and energy transportation, \$0.5 million. This increased spending brought total federal energy R&D expenditures up to an estimated \$138 million in the fiscal year 1977-78, distributed approximately as follows: nuclear energy, 68 per cent; fossil fuels, 11 per cent; energy conservation, 9 per cent; renewable energy, 7 per cent; and energy transportation and transmission, 5 per cent.

Most of the R&D on nuclear energy is conducted by Atomic Energy of Canada Limited (AECL), a Crown corporation. AECL's current major thrust is in support of its CANDU (Canada Deuterium Uranium) nuclear power reactor system and associated heavy water plants. Successful operation of the Pickering generating station and of the Bruce and Port Hawkesbury heavy water plants has convincingly demonstrated the commercial viability of the CANDU system. Much of AECL's R&D in improved equipment, components and materials for CANDU reactors is done in collaboration with Canadian industry.



The heavy water plant at the Bruce Nuclear Power Plant.

Private industry and the utilities play a major role in R&D on oil, gas and electrical energy systems, which compensates for lesser federal funding in these areas.

Several provincial governments support energy R&D in research councils or foundations, industry and universities. Their expenditures in energy R&D, together with those of industry, are estimated to add up to a level of activity in the same order of magnitude as that of the federal government.

An Alberta-Canada Energy Resources Research Fund of \$96 million, to be spread over a six-year period, was initiated during the fiscal year 1976-77 with a first-year federal contribution of \$4 million. The federal government also has agreements for co-operation in energy R&D with other provincial governments in such areas as coal, electricity, conservation, renewable energy, heavy oils, uranium, oil sands and nuclear energy.

Within the federal government, the Department of Energy, Mines and Resources is concerned with the determination of reserves of oil and gas, mainly in the frontier areas. The Department of Industry, Trade and Commerce (ITC) is playing an important role funding R&D on the development, production and processing of energy resources and it is by far the predominant department in transportation and storage R&D, mainly related to oil and gas.

ITC and NRC are major contributors to transmission R&D. Fisheries and Environment Canada is predominant in environmental management (especially of oil and gas pipelines).

Remote Sensing. The Canada Centre for Remote Sensing, a branch of the Department of Energy, Mines and Resources, develops and demonstrates systems, methods and instruments to acquire, disseminate and analyze remote sensing data from aircraft and satellites, as a contribution to the development of effective information and management systems for Canada's land and ocean resources and environment. The data are applied to a wide variety of disciplines, including agriculture, forestry, geology, oceanography, glaciology and ice reconnaissance. The four aircraft used for remote sensing are operated and maintained by Innotech Aviation Limited of Montreal.

The centre's satellite receiving station in Prince Albert, Sask., receives data from two American earth resources satellites, Landsat-1 and Landsat-2, and one weather satellite, NOAA-3. A new satellite receiving station in Shoe Cove, Nfld., was

The Falcon Fanjet, one of four aircraft used by CCRS for scanning at close range to obtain information ranging from the health of forests to the spread of cities.





Adjusting a spacecraft antenna feed system.

scheduled to begin operating in January 1977; it will also receive data from the Landsat and NOAA satellites and will supplement the services provided by the station in Prince Albert, which receives data for all of Canada except Newfoundland and the east coast. Colour images are distributed throughout Canada by the National Air Photo Library of the Department of Energy, Mines and Resources and black and white images are distributed by ISIS Ltd. of Prince Albert. ISIS Ltd. also offers facsimile services of satellite images to ships and oil rigs operating off the east coast and in the Arctic.

Communications and Space Research

Total government expenditure on space research in 1976-77 has been estimated to be \$55 million. Government departments with a direct interest in space research and activities are Communications, Fisheries and Environment, Transport, National Defence, and Energy, Mines and Resources; the National Research Council is also involved in space research. Domestic satellite communications service is provided by Telesat Canada, a company owned by the federal government and the Trans-Canada Telephone System. Teleglobe Canada, a Crown corporation, provides overseas communications service.

Canada's newest satellite, called Hermes, was designed and built by the Communications Research Centre of the Department of Communications; this experimental communications technology satellite (CTS) was launched in January 1976 by the United States. It is the world's most powerful telecommunications satellite in orbit.

Hermes may well become the forerunner of a series of new high-powered satellites operating at virtually interference-free frequencies, receiving and transmitting two-way video, audio and data signals. The earth stations used with Hermes have antennas ranging in size from one to three metres, making them the smallest now in service and just a step away from terminals that may be mounted on rooftops. The small earth stations are made possible by Hermes' high power; less powerful satellite systems require much larger dish antennas. A number of groups are using the satellite for experiments in communications ranging from tele-medicine and tele-education, whereby medical and teaching services can be provided from a distance, to technological experiments.

The Department of Communications, along with the Ministry of Transport, is participating in an international aeronautical satellite (Aerosat) program designed to develop the use of satellites for international air traffic control. Aerosat is a joint effort by the European Space Agency (ESA), Canada and the United States. Funding, ownership and user participation have been calculated at 47 per cent US, 47 per cent ESA and 6 per cent Canada, rates based approximately on the GNP of each participant.

Canada's first satellite, Alouette, was launched in 1962 and made Canada a pioneer in the use of satellites in scientific research. This satellite and its successors, Alouette II and ISIS I and II, contain experiments to study the properties of the upper atmosphere and of electronic devices such as antennas in that environment. Alouette I went out of service after 10 years of useful life and the Alouette II satellite was placed in a standby "mothball" status on June 3, 1973, after seven and a half years of extensive and valuable data acquisition. ISIS I and II are still in good health and are providing extensive scientific data to scientists from the eight countries that are participating in the analysis of the data.

The National Research Council, whose activities include operation of the Churchill Rocket Range, spent about \$17.5 million in 1976-77 and is the project manager for delivery of a remote manipulator system (RMS) to the United States as part of the National Aeronautics and Space Administration (NASA) space shuttle program. Spar Aerospace Ltd. of Toronto is the prime contractor for the RMS, which is like a long mechanical arm to be used to take satellites out of a space shuttle's cargo area and place them into orbit or pull them out of orbit for repair. The space shuttle, with a payload capacity of 29 500 kg (kilograms), will be launched like a rocket, orbit like a spacecraft and land like a large aircraft.

The Anik system was inaugurated in January 1973 by a telephone call from Ottawa to Resolute Bay via Anik I. Three satellites are now in orbit and are performing satisfactorily, exhibiting only slight anomalies not expected to have any major effect on their longevity or usefulness; they have an estimated useful life of six years. Telesat Canada has awarded a contract for a fourth satellite in its Anik series, to be launched in 1978. In addition, the company has plans for three more satellites to operate in the higher frequency (12-14 GHz) range.

Teleglobe Canada spent about \$3 million in leasing channels on communications satellites and about \$5 million for improving the ground station network.

The Department of National Defence spent about \$2.5 million on its space activities, the principal one of which is part of its commitment to NORAD. The Department of Industry, Trade and Commerce spends about \$2 million a year in support of the country's aerospace industry.



Medical research and development supplies Canada's hospitals with ever-improving technology for health care.

Medical and Health Research

Biomedical research in Canada is carried out primarily in laboratories located in the universities and their affiliated hospitals. The major part of the financial support for the direct operating costs of this research is provided by the federal government through grants or contributions to investigators whose salaries are, by and large, paid from university funds. Voluntary agencies such as the National Cancer Institute of Canada, the heart foundations, the Arthritis Society and others that derive their monies from public campaigns are providing an increasingly significant share of the support for research in the health sciences. The share provided by provincial governments has also grown in recent years.

In 1976 over 2,000 investigators received research grants from the various funding agencies. Their work ranged from the development of reading machines for the blind, through clinical trials of drugs thought to be useful in the prevention of strokes, to research of the most fundamental kind related to the immunology of transplantation. The two federal bodies with primary responsibility in the field of health research are the Medical Research Council, whose main function is the support of university-based research in the health sciences, and the Research Programs Directorate of the Department of National Health and Welfare, which is concerned particularly with studies relating to the biology of populations, the delivery of health care and the alteration of lifestyles in order to prevent disease.

The Department of National Health and Welfare also carries out research in central laboratories of its own. Research in the department's Health Programs Branch has seen the development of a preparation for the slow release into the body of the anti-tuberculosis drug isoniazid, permitting larger doses to be given to Inuit, among whom the risk of tuberculosis is greater. There has been substantial progress

in field trials of rubella vaccines and increased activity in the study of mental and physical rehabilitation problems.

Northern Research

Canada has long recognized the contribution research makes to the socio-economic development of the North. Moreover, the Canadian north has some unique characteristics that are of particular interest to the scientific community.

Because of this, the Department of Indian and Northern Affairs has designed certain long-term measures to encourage and support northern research. The training of graduate students is assisted by special grants administered by the department. In addition, under its Northern Science Resource Centres Program the department operates the Mackenzie Delta Science Resource Centre at Inuvik and the Eastern Arctic Science Resource Centre at Igloolik to accommodate scientists from government, universities and industry. Plans are being made for science resource centres at Whitehorse in the Yukon Territory and at Yellowknife and Resolute Bay in the Northwest Territories.

These measures do not, however, meet the need for research to support development programs or to obtain specific information required to support the regulatory and administrative responsibilities of the department. For these purposes substantial short-term programs of applied problem-oriented research have been organized, such as the environmental-social program, the northern pipelines program, the Beaufort Sea project, oil-spill studies, waste disposal studies and regional socio-economic studies.



Communications

The existence of Canada as a political and social entity has always been heavily dependent upon systems of east-west communications. This is the historical reason for development of the routes of the voyageurs, coast-to-coast railways, telegraph and telephone systems, broadcasting services, airlines, microwave networks, the Trans-Canada Highway and a domestic communications satellite system. These systems, counter-balancing the strong north-south pull of continentalism, have been essential for the economic development of Canada, for transmitting and disseminating information and for expressing and sharing social and cultural values.

Telecommunications make possible virtually instantaneous transfer of information in any form between all parts of the country. They help bridge distance—an obstacle to national trade and commerce—and provide prospects for reducing regional disparities and developing the Canadian north.

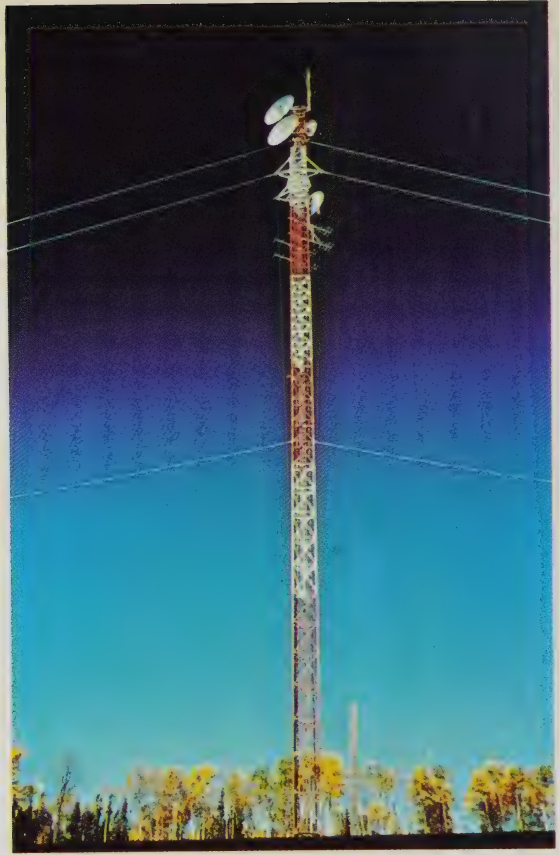
Television, radio, telephone, telegraph, teletype, facsimile and other means of communications have become part of our daily life. By January 1, 1976, the number of telephones in service in Canada had reached 13,165,010 (more than one phone for every two people). Ninety-eight per cent of households now have radios and 97 per cent have television sets. Cable television, a medium that may provide a variety of services in the future, including two-way communications, is now wired into more than 2.9 million Canadian households (about one in three). Radio station licences in force in Canada at the end of the fiscal year 1975-76 numbered about 516,000, a 30 per cent increase over the previous year.

In most countries outside North America, telecommunications services are provided by the state. In Canada, these services are provided by a mixture of investor-owned companies and government agencies. The industry comprises telephone and telegraph companies, broadcasters and cable operators, and manufacturers of telecommunications equipment. Operations of telecommunications carriers are generally licensed and regulated by either federal or provincial authorities.

Broadcasting transmitting and receiving undertakings are federally regulated. Telecommunications carriers under federal jurisdiction include Bell Canada, British Columbia Telephone Company, CNCP Telecommunications, Telesat Canada, Teleglobe Canada and four relatively small telephone or telegraph companies. All other telecommunications common carriers are provincially regulated.

There were about 860 telephone common carriers by the end of 1975, ranging from big corporations serving millions of telephones to small co-operatives, mainly in Saskatchewan. However, the nine member companies of the Trans-Canada Telephone System (TCTS) account for more than 90 per cent of total subscribers. Much of the long distance communication in Canada travels by their two nationwide microwave routes.

Other telecommunications services are provided by a variety of carriers. CNCP Telecommunications, specializing in business communications, offers services such as telegraph and telex. Telesat Canada, jointly owned by the Canadian government and the common carriers, operates the domestic satellite communications system consisting of three Anik satellites and an associated ground network. Teleglobe



A microwave tower at Fort McMurray, Alta

Canada, a Crown corporation, provides Canada with telecommunications to the rest of the world through cables and international telecommunications satellites.

The federal Department of Communications is responsible, both nationally and internationally, for the development and efficiency of communications in Canada and for the long-range planning of Canada's communications. It carries out research in the field of telecommunications and manages the radio-frequency spectrum in Canada. This latter function requires development of regulations, technical standards, radio-frequency plans and assignment criteria. It includes: technical evaluation of applications to use radio frequencies, licensing of radio stations and technical certification of broadcasting undertakings; inspection and monitoring of radio stations to ensure adherence to regulations and standards; and gathering of information for spectrum planning purposes.

A score of groups ranging from provincial governments to native peoples' associations are shaping the satellite communications services of tomorrow in a unique program of social and technical experiments using Hermes, the department's Communications Technology Satellite (CTS), which was launched on January 17,



Testing telephone connecting equipment in a residential area.

1976. The aim of the CTS experiments is to test the technology and applications of a new breed of high-powered orbiting transmitters to meet the needs of the 1980s.

There has been a rapid upsurge in the purchase and use of two-way radio in the general radio service (GRS), or citizen's band as it is frequently called. This trend shows no sign of slowing and so will lead to a greater congestion of the radio frequency spectrum, a limited resource. The federal government authorized the use of 40 GRS channels as of April 1, 1977.

A \$19 million contract for construction of Canada's fourth commercial satellite for domestic telecommunications, to be launched in 1978, was announced by Telesat Canada in December 1975. Telesat also announced in 1977 that it would procure three additional satellites that will operate in the higher frequency (GHz) range. The higher frequencies permit the use of earth stations in the centres of metropolitan areas. About 35 900 km above the earth, Telesat's first three satellites in the Anik series have facilities for relaying 10 colour television channels or up to 9,600 simultaneous telephone circuits. All Canada is within their range; distance and isolation are removed as obstacles to communications for government, business, industry, science and technology.

Teleglobe Canada is the Canadian signatory to the International Telecommunication Satellite Organization (Intelsat) and operates earth stations at Mill Village, NS, and Lake Cowichan, BC. In 1976 it expanded its facilities to accommodate the demand for international telephone, telex and telegraph during the Olympic Games held in Montreal in July 1976. A transportable earth station was erected on Mount Royal to transmit two simultaneous television channels to Europe via the Intelsat



satellites stationed 35 900 km over the equator. It is estimated that a billion people watched the Games on television around the world.

The Trans-Canada Telephone System (TCTS) inaugurated Direct Dialing Overseas (DDO) in service in Vancouver in September 1976, making Vancouver the first Canadian city to have this service. In the next three years Victoria, Edmonton, Calgary, Toronto, Ottawa, Montreal, Quebec City and Halifax are scheduled to be hooked up for DDO.

The Standard Network Access Protocol (SNAP) is the standard of a new TCTS Datapac network. Datapac was the first to provide packet switching for commercial use in Canada; it allows information to be put in standard-size packets for data transmission and gives the format in which data can be transmitted. Approval of standards for such universal packet-switching data networks by the UN's International Consultative Committee on Telephone and Telegraphs in March 1976 means that various data networks can now be interconnected.

Companies belonging to TCTS have started to plan and construct provincial service co-ordination centres where the networks are monitored. If one circuit is broken in an emergency it is reported instantly, and another route may be found. In this way downtime in telecommunications—with its increasingly intolerable costs—is minimized. Such centres are now in New Brunswick, Quebec and Ontario, and another is planned for Manitoba.

Canada Post and CNCP Telecommunications have extended their Telepost service to the public. Telepost features next-day delivery and gives Canada Post electronic mail for the first time; it is also linked with the US Mailgram network. The Infodat network, a digital service provided by CNCP, has expanded to 31 servicing locations from St. John's, Nfld., to Vancouver, BC. CNCP plans to introduce a nation-wide digital data switching network called Info-Switch, which will offer both circuit and packet switching.

The first leg of Double DUV (Data-Under-Voice) was put into operation in June 1975. Double DUV is an improved method of sending data communications over the existing microwave network. It is based on a new transmission technique that transmits digital data in a portion of the microwave radio spectrum below the frequencies normally used for voice telecommunications. The existing service from Montreal to Winnipeg was expected to reach from Halifax to Vancouver by spring 1977.

One of the federal government's top priorities in telecommunications is extending access to basic communications to all Canadians, particularly those living in isolated or rural parts of the country. In January 1977 the government announced a funding program designed to extend basic telephone service to all communities in the Northwest Territories. At the other extreme—in Canada's urban centres—the demand for access to good communications grows while the radio frequency spectrum becomes more congested. Use of the spectrum can be expanded by going to higher frequencies than those occupied now or by more efficient use of existing frequencies. This places demands on government for research in opening up higher frequency bands and policy on allocation of frequencies. Use of frequencies between 10 and 20 GHz is expected to grow dramatically in the next decade.

There is an evident and growing tendency for many formerly distinct systems of electronic communications to become interconnected. One important symptom of this development is the rapid integration of computers and communications, the economic benefits of which are already being exploited.

Federal policy is that communications should be developed with regard for its impact on Canadian social and cultural values, the economy and the quality of life.

The Telesat Canada antenna at Pangnirtung, NWT.





The journalistic drama, Ada, in production. It was later aired as part of the CBC series, For the Record.

The Canadian Broadcasting Corporation

The CBC is a publicly owned corporation established by the Broadcasting Act to provide the national broadcasting service in Canada. Created in November 1936, it reports to Parliament through the Secretary of State, while responsibility for its policies and programs lies with its own directors and officers. It is financed mainly by public funds voted annually by Parliament; these are supplemented by revenues from commercial advertising—mostly on television, since CBC radio is almost completely non-commercial.

The CBC's head office is in Ottawa. The operational centre for English services is in Toronto, and there are several regional production centres across the country. The operations of the French services are centred in Montreal, with local stations at other points in Quebec and in most other provinces.

The corporation's facilities extend from Atlantic to Pacific and into the Arctic Circle, and include both French and English networks in television and in AM and FM stereo radio. A special northern radio service broadcasts in English, French, several Indian languages and Inuktitut, the language of the Inuit; northern television is also beginning to introduce some programming in Inuktitut.

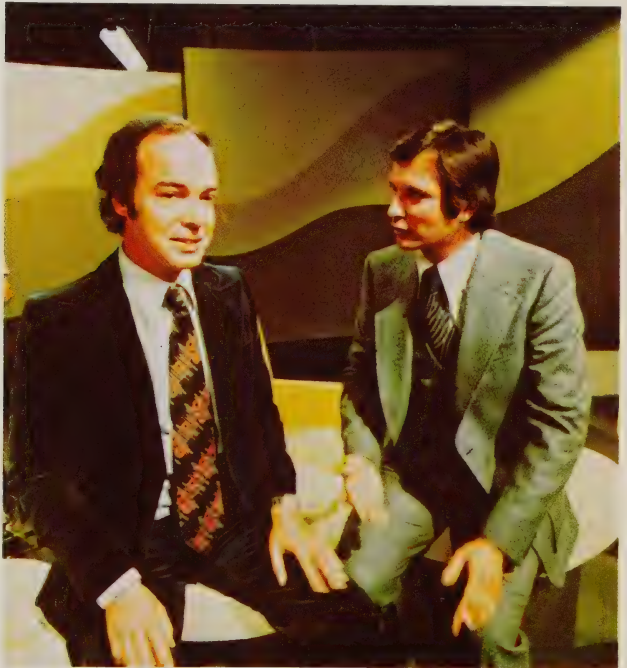
In both radio and television, CBC networks are made up of some stations owned and operated by the corporation, which carry the full national service, and some privately owned affiliated stations, which carry an agreed amount of CBC programming. In many small or isolated locations there are relay or rebroadcast transmitters that carry the national service but have no staff or studios to produce local programs. CBC transmission methods include leased channels on the Canadian space satellite Anik.

Radio Canada International, the CBC's overseas shortwave service, broadcasts daily in 11 languages and distributes recorded programs free of charge for use by broadcasters throughout the world. The CBC Armed Forces Service, in co-operation with the Department of National Defence, provides recorded and shortwave radio programs for Canadian military bases abroad. In other international activities, the CBC sells programs to other countries, is a frequent winner of international program awards and belongs to several international broadcasting organizations. The corporation maintains offices in London, Paris, New York and Washington, and news bureaus in the Far East, Moscow and Brussels.

CBC schedules are varied, reflecting the principles set out in the Broadcasting Act that "the national broadcasting service should be a balanced service of information, enlightenment and entertainment for people of different ages, interests and tastes, covering the whole range of programming in fair proportion." Program content is largely Canadian—about 70 per cent in television and usually more in radio—with a selection of programs from other countries.

CBC gives continuing support to Canadian artists and performers through the broadcast of Canadian music, drama and poetry, the commissioning of special works, the sponsorship of talent competitions and the presentation of Canadian films. Selected program material is made available for educational use after broadcast in the form of books, recordings, audiotapes and films.

Preparing a show for the French network series Le pour et le contre, which consists of debates during which viewers can phone in their opinions.





Every year letter carrier service extends to more households.

The Postal Service

At the end of the 1975-76 fiscal year, 8,506 postal facilities were in operation across the country. Mail delivery by letter carrier was increased by 272,085 points of call, making a total of 5,508,919 points on 12,480 full-time and 469 partial letter-carrier routes; there are now 279 post offices providing letter-carrier service. Improvements continue to be made in the frequency and quality of service to isolated or remote communities where mail transportation is normally by air.

The coding and mechanization program began in 1972 with the goal of achieving more efficient handling of mail. Automated electronic equipment is capable of sorting first class mail at speeds of from 20,000 to 30,000 pieces an hour by use of the postal code. By the end of 1976 machines had been installed in Ottawa, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver, Toronto, Hamilton, Saint John, NB, and St. John's, Nfld. All of the 30 plants that account for 85 per cent of domestic mail will have automatic high-speed mail sortation by 1978.

Other new machinery that has been introduced is capable of sorting flats, or oversize mail, at speeds of up to 6,000 pieces an hour. Since first class parcels and small packets are already being machine-sorted, this means that now virtually all classes and kinds of mail can be sorted mechanically.

Conventional methods of transporting mail within cities are being reviewed in the light of increasing fuel costs and concern for the quality of the environment. The Post Office is conducting trials with electric-powered vehicles in several cities across Canada.

The National Postal Museum, located in Ottawa, is constantly adding to its unique collection of philatelic and historical items, and as a result the number of museum visitors from Canada and elsewhere continues to increase each year.

External Relations

Foreign policy goals

Canada's foreign relations make possible or facilitate many of the everyday activities of Canadians. The businessman who produces for export, the consumer who relies on imports, the graduate student who enters a foreign university under a scholarship exchange, the tourist whose travel abroad is simplified by internationally-accepted passport and civil aviation practices—all take it for granted that Canada's position in the world will not change suddenly in a manner inimical to their interests.

The protection and promotion of Canadians' collective interests abroad involves the activities of more than 20 federal government departments and agencies. The Department of External Affairs co-operates with the other departments in the implementation of their international programs, while ensuring that the actions of all departments are consistent with Canadian policy goals.

Foreign policy objectives reflect national priorities as perceived and pursued by government. Unlike domestic policy objectives, however, the objectives of foreign policy are unlikely to be achieved without the co-operation of other governments. Some foreign policy objectives are long-term and involve the welfare of all Canadians—the preservation of Canadian security, for example. Others are short-term and involve more particular interests, such as co-operation with the United States to improve the quality of water in the Great Lakes.

A review of foreign policy published in 1970 identified six major themes of national policy at home and abroad. These are to foster economic growth, safeguard sovereignty and independence, work for peace and security, promote social justice, enhance the quality of life and ensure a harmonious natural environment. The character of Canadian foreign policy at any time is determined by the pattern of emphasis given to these policy themes, as well as by the constraints and opportunities that external and internal circumstances may suggest. In general, the government seeks to emphasize what Canada can do best in the light of the resources available.

Canada and the United States

Canada's relationship with the United States is clearly our most important one and is central to a broad range of Canadian interests. It is a varied and complex relationship and differences and frictions can and do occur from time to time, as Canada's interests are not always identical to those of the US. However, the basic character of relations between the two peoples and governments is very much one of friendship and of constant effort at mutual understanding and co-operation. Such sound relations between the two governments are maintained by a process of prior notification, consultation and negotiation when appropriate in the handling of bilateral issues.

Canada and the United States continue their close co-operation on North American and NATO defence questions. The Permanent Joint Board on Defence, for

example, has met regularly since 1940. In 1975, the North American Air Defence (NORAD) Agreement was renewed, transferring full responsibility for control of Canadian airspace to Canadian command centres.

The two countries co-operate closely in resolving transboundary environmental questions, an increasingly important sector of bilateral relations. A principal instrument of this co-operation is the International Joint Commission. Established in 1909 by the Boundary Waters Treaty, the IJC is a unique approach to international environmental co-operation.

Canada and the United States are each other's best customers. The United States provides the market for about two thirds of Canada's exports, while Canada takes approximately one fifth of the exports of the US. There is also great interdependence in the financial field, with large US investments in Canada and substantial Canadian investments in the United States.

Canada and the US also work together, along with other countries, in a variety of international forums where global political, social and economic questions are considered.

Thus, there is always a very busy agenda in Canada's relations with the US, which requires careful attention in order to ensure a mutually beneficial relationship.

Prime Minister Trudeau addressed the Congress of the United States on February 22, 1977.





Prime Minister Trudeau and Britain's Prime Minister James Callaghan walking to the NATO Summit Conference in London, May 1977.

New Directions

Europe

Canada's relations with Europe are founded on deep-rooted historical, linguistic, ethnic, cultural and social affinities. The vast majority of Canadians are of European extraction and many of the more recent immigrants maintain strong ties with their countries of origin.

The European Communities constitute Canada's second most important trading partner and present obvious opportunities for Canada in our search for alternatives to complement our close economic relationship with the US. In July 1976 Canada and the European Communities signed a Framework Agreement for Commercial and Economic Co-operation—sometimes referred to as the “contractual link”. The agreement, the first of its kind to be concluded between the European Communities

and an industrialized country, provides a framework and a focus for economic co-operation that should lead to increased trade and investment opportunities between the two parties. A central element of the agreement is industrial co-operation, which is to be developed through increased intercorporate links, investment flows, science and technology exchanges and two-way trade. The agreement also provides for regular consultations through the vehicle of a Joint Co-operation Committee, and is non-preferential.

Canada's efforts to develop relations with the European Communities as a distinct entity have been paralleled by efforts to strengthen bilateral relations with the individual members and with non-member European countries.

European stability is vital to the assurance of world peace. Through membership in NATO, Canada contributes to peace and security in Europe by helping to maintain a deterrent to conventional and nuclear attack. NATO offers Canada an effective forum for consultation and joint action with the 13 European member states, not only in the military and political but also in the economic, social, scientific and environmental spheres. Canada also participates in the negotiations aimed at mutual and balanced force reductions in Central Europe that began in Vienna in October 1973 between members of NATO and the Warsaw Pact nations.

Canada also participated fully in the two years of negotiations that led in August 1975 to the Final Act of the Conference on Security and Co-operation in Europe, signed in Helsinki by the political leaders of the 35 participating states. This document, which marks a significant step forward in the process of détente, is the groundwork for expanded co-operation between East and West in the fields of economics, the environment and science and technology. The Final Act enunciates general principles of interstate relations and also provides a basis for increased human contacts and the freer movement of information and ideas among the participating states. As a party to this agreement, Canada consolidated ties with Europe as a whole and provided a stimulus for improving relations with eastern Europe. A conference to review progress in implementing the Final Act was scheduled to be held in Belgrade in June 1977.

Asia and the Pacific

With the development of modern transportation and communications, Canadians have become increasingly aware of their position as a Pacific as well as an Atlantic nation. The countries of Asia and the western Pacific include some of the most highly-industrialized and wealthiest countries of the world, such as Japan and Australia, and some of the poorest and least-developed, such as India and Bangladesh. Canada has established valuable trading relations with the former group and has played a major role in assisting the development of the latter.

Japan, Canada's third most important trading partner, is very important to the Canadian goal of diversifying external relations. A Framework for Economic Co-operation was concluded in 1976, and efforts continue to increase the manufactured and upgraded content of Canadian exports to Japan. But the relationship between Canada and Japan is much broader than a commercial one. The two countries are expanding co-operation in political, economic, scientific, technological and other

fields. A Cultural Agreement drawn up in 1976 provides the basis for expanding existing programs and exchanges.

The Sino-Canadian relationship as a whole reflects Canada's belief that the co-operation and participation of the People's Republic of China are essential to peace and stability in the Asian and Pacific regions and in the world at large. Exchanges with China in the fields of industry, science, medicine, culture, education and sports continue to grow and Sino-Canadian trade has expanded.

Relations with the Rest of the World

The 1970 foreign policy review recommended that Canada undertake to strengthen our relationship with Latin America and there has since been a steady increase of Canadian interest in developing relations with individual countries and with the region as a whole, an interest that has been reciprocated. This was demonstrated when Prime Minister Trudeau visited Mexico, Cuba and Venezuela in 1976. Canada now has a permanent observer mission to the Organization of American States, has joined a number of other inter-American organizations and has developed commercial relations with the region as a whole, which has increased trade from \$1,099.3 million in 1970 to \$3,418.0 million in 1976. Canada has also extended an increasing amount of development assistance to a number of Latin

Secretary of State for External Affairs Don Jamieson's arrival at the Planalto Palace in Brasilia to visit Brazil's President Geisel.



American countries. At the same time an ever-increasing number of Canadians are travelling to Mexico, Cuba and other Latin American nations for holidays or retirement and there have been more and more exchanges in cultural, technical and academic fields.

Canada's major concerns in the Middle East are the achievement of a just and lasting peace to end the Arab-Israeli conflict and the development of bilateral relations with countries in the region. Canada's approach to the conflict is based on support for the principles of the United Nations (UN) Security Council Resolution 242 and respect for the sovereignty of all states in the Middle East (including Israel) and for the right of the Palestinian people to participate in negotiations affecting their future. Canada has contributed to the maintenance of the present cease-fire by providing approximately 1,050 military logistics specialists to serve with the UNEF/UNDOF (UN Emergency Force/UN Disengagement Observer Force in the Middle East) peacekeeping observer forces.

Canada's relations with Africa are characterized by co-operation in technical development, diversified economic and commercial ties and the common search for social justice. The establishment of cultural, academic and scientific relations with the African countries has begun recently. Canada's cultural duality is reflected in established bilateral contacts with both English-speaking and French-speaking African states to achieve these objectives. In addition Canada uses the means available to help reach a peaceful solution to the problems of southern Africa so that the aspirations of the African majority in that area can be realized.

The present relations between Canada and the Commonwealth Caribbean have evolved from historical ties and association in the Commonwealth has contributed to mutual understanding through shared institutions and values. Trading relations with some countries have been substantial and have been supplemented by considerable Canadian investment in the area. In recent years communication between the West Indies and Canada has increased through the movement of large numbers of tourists, students, businessmen and immigrants. The Commonwealth Caribbean receives the highest per capita disbursements in Canada's aid program.

Multilateral Diplomacy

The preceding paragraphs have dealt with Canada's bilateral relations—relations with individual countries. In addition the achievement of Canada's national aims requires multilateral activity—participation in organizations and conferences in which many or most of the other countries of the world are represented and that have as their goal the solution of particular problems.

As a leading trading nation Canada has particular interest in the growth and stability of the world economy. The increased interdependence of national economies has been reflected in a series of "economic summits" of leaders of the seven largest industrialized democracies, including Canada. Identification of particular problems in the international economy and the commitment by leaders to co-operate fully in efforts toward resolving them supports and complements the continuing efforts in established international forums. Canada has been actively participating in the multilateral trade negotiations in Geneva, the most comprehensive yet undertaken, and has also played an influential role in negotiations on

international monetary reform conducted under the sponsorship of the International Monetary Fund. Canada contributes to the World Bank and to regional development banks in extending multilateral development assistance and is a founding member of the International Energy Agency established under the auspices of the Organization for Economic Co-operation and Development. Canada also works through the International Atomic Energy Agency for the application of nuclear power to peaceful pursuits.

Three international organizations of diverse kinds are of special interest to Canada—the UN, the Commonwealth and the French-speaking community.

The United Nations

Canada has worked diligently to make the UN an effective instrument for international co-operation and to improve its capacity to discharge its Charter responsibilities. The activities of the organization touch on almost every aspect of Canada's foreign policy aims.

Economic questions have attracted increased attention at the UN in recent years. The developing countries make up more than two thirds of its membership and they exhibit considerable solidarity in UN forums in the promotion of a new international economic order more favourable to them. Canada recognizes the need for changes in international economic relations to reduce disparities between rich and poor nations, at the same time realizing that there exist, and will continue to exist, practical restraints upon the extent to which progress can be made in the short and medium terms. Commitment to positive long-term change is demonstrated by Canadian participation in international economic deliberations such as the Conference on International Co-operation in 1976-77 and in multilateral forums such as UNCTAD (UN Conference on Trade and Development) and UNIDO (UN Industrial Development Organization), and through contributions made to development assistance through the World Bank and the regional development banks.

On January 1, 1977, Canada began a two-year term on the UN Security Council, the fourth time we have filled one of these non-permanent seats since the UN's inception. Canada has also participated in all major UN peacekeeping operations and in mid-1976 military personnel were serving in this capacity in the Middle East, in Cyprus and in Kashmir. Canada will consider requests to participate in such ventures when they hold the promise of contributing to peace and stability.

Canada plays an active role in efforts in the UN and other forums, such as the Conference of the Committee on Disarmament (CCD), to develop effective agreements to prohibit, limit or control the use of armaments, particularly nuclear weapons and other weapons of mass destruction.

A number of conferences organized under UN auspices have dealt with matters of special importance to Canada, such as the Habitat Conference on Human Settlements held in Vancouver in 1976 and the UN conferences on the environment, population, food and water held in recent years in other countries. At the Law of the Sea Conferences there have been arduous negotiations to draw up a comprehensive treaty on the law of the sea.

Canada participates in all of the specialized agencies of the UN, one of which, the International Civil Aviation Organization, is located in Montreal. Canada also

contributes the ninth-largest share of the regular annual budget of the UN and, since 1946, has contributed a total of nearly \$900 million to the UN family of organizations.

The Commonwealth

As the colonies within the British Empire achieved self-government and independence, similarities of language, habits, institutional traditions and working methods convinced many national leaders that maintaining some form of association would be valuable. The fruit of that belief is the modern Commonwealth. The shared values and traditions of this association facilitate consultation among governments in a confidential and informal atmosphere that is missing in more complex international organizations. The Commonwealth is able to transcend the differences of ideology, race, region and economic conditions and to bring a global, multiracial perspective to bear on matters that concern its members and the world at large.

The biennial meetings of Commonwealth heads of government and the annual meeting of Commonwealth finance ministers attract wide public attention. The public is less aware of the programs of functional co-operation and the specialized exchanges that take place regularly under Commonwealth auspices—among parliamentarians, educators, scientists, journalists, health officials, youth leaders, etc. Of the over 50 conferences held each year, about half are organized by non-governmental Commonwealth organizations. In 1978 Canada is to host the 11th Commonwealth Games in Edmonton, Alberta, the 12th Congress of Commonwealth

The Lester B. Pearson Building, Ottawa headquarters for the Department of External Affairs.





The Canadian Ambassador to France, Gerard Pelletier, with Prime Minister Trudeau on the way to lunch with editors of the Paris newspaper, Le Monde.

Universities and the second General Conference of the Commonwealth Council for Educational Administration.

The French-speaking Community

As nearly one third of all Canadians are French-speaking, the federal government fosters the broadening and strengthening of ties with La Francophonie—those countries that are entirely or partially French-speaking. This involves participating in a number of bodies such as the Agency for Cultural and Technical Co-operation, the Conference of Ministers of Education and the Conference of Youth and Sports Ministers of francophone countries.

Federal-provincial aspects of international relations

The Canadian provinces have an obvious interest in the international aspects of matters for which they have domestic responsibility and in other matters that may effect them. The Department of External Affairs maintains liaison with the provinces and helps develop procedures for co-operation. This is demonstrated, for example, by the provincial involvement in the implementation of bilateral cultural

agreements that Canada has signed with such countries as France, Belgium, the USSR, Japan, Mexico and the Federal Republic of Germany.

On the economic side, procedures are being worked out to facilitate provincial involvement in relations between Canada and the European Communities following the signing of the Framework Agreement on industrial co-operation, and the provinces are frequently briefed on the Multilateral Trade Negotiations in Geneva. "Provincial interests" officers in our Washington Embassy (as of 1976) and in our Mission to the European Communities (as of 1977) are responsible for sending documentation of interest to the provinces and seeing that provincial concerns are adequately met.

Provincial governments are actively involved in Canadian participation in a variety of international conferences and organizations. This is achieved through federal-provincial consultation on programs and policies, inclusion of provincial ministers and officials on Canadian delegations and provincial government involvement in program implementation. The federal government also assists provincial officials by making arrangements for provincial visits abroad and by co-ordinating visits of foreign dignitaries to the provinces. During the negotiation of formal agreements between Canada and other countries, consultations take place between the federal government and the provinces if the terms of such agreements touch on provincial or joint federal-provincial fields of jurisdiction.

Projecting Canada's Image Abroad

The Department of External Affairs conducts a public affairs program in liaison with other federal departments and agencies involved in the cultural and information fields, as well as with the provinces and with interested organizations and individuals. The basic aims of the program outside Canada are to foster in influential circles an awareness of Canada's accomplishments in a variety of fields and of our positions on international issues.

This program seeks to create a favourable climate of opinion for the achievement of foreign policy objectives and to assist the cultural and academic communities to achieve international exposure and experience.

Public affairs activity is greatest in the US, the European Communities and Japan, reflecting the importance of these areas to Canada. Cultural centres have been established as permanent showcases in Brussels, London and Paris and Canada has general cultural or exchange agreements with Belgium, Brazil, France, the Federal Republic of Germany, Italy, Japan, Mexico and the USSR, and specialized reciprocal programs with a number of other countries.

Public affairs activities include: promotion and distribution of publications and films about Canada and our policies; exhibits; speakers; response to inquiries; exhibitions of Canadian art; assistance to Canadian performing groups touring abroad; donations of Canadian books to foreign libraries; and exchanges of scholars, language teachers and young people pursuing advanced studies.

There is also a public affairs program within Canada, whereby information about the department and foreign policy formulation is provided to Canadians.



the economy

Economic Trends in Canada, 1976-77

The recovery of the Canadian economy from the effects of world-wide recession—the worst in 40 years—continued in 1976. After a year of very little growth in 1975, the volume of goods and services produced in Canada rose by close to 5 per cent in 1976. This performance coincided with and was assisted by recovery in other major industrialized countries.

However, at 5 per cent the growth of production in Canada in 1976 was barely in line with the country's underlying potential growth rate. Thus, the shortfall in income and output—that is, the gap between actual and potential gross national product (GNP), which amounted to some \$15 billion— was very little changed from the preceding year. As the year 1976 progressed evidence of a marked slowing in the momentum of the up-turn began to become apparent, both in Canada and in the economies of our principal trading partners. With the slowing in the pace of the recovery, the year 1976 ended with unemployment edging upwards and with economic prospects for 1977 being scaled down. Indeed, the “pause” in the recovery that gave rise to this scaling down of prospects for 1977 was general throughout the

industrialized world. As the new year began the authorities in the stronger countries were considering what measures might be necessary to revive the faltering world economy.

This pause in Canada's economic up-turn was related to several factors. In part it reflected cautious fiscal and monetary policies designed to prevent demand from becoming excessive, as had sometimes happened in previous recoveries, and to gradually reduce the country's dangerously high rate of inflation. In part it also reflected the fact that plant and equipment spending in the business sector showed little sign of recovery. This development, in turn, was associated with the existence of a large amount of underutilized capacity, a rather poor profits performance, uncertainties related to the anti-inflation program and a continued high (although gradually subsiding) rate of inflation. Consumers remained relatively cautious throughout the recovery, with rates of saving at or near record peace-time levels, and governments' determination to hold down the growth of the public sector resulted in little expansionary effect from government spending for goods and services. Canada's performance in 1976 was also affected by the widespread nature of the slow-down, which was also occurring in the economies of our major trading partners. The combination of all of these factors meant that, despite the 5 per cent growth in the volume of goods and services produced in 1976, the year ended with production slowing and with the unemployment rate running in the neighbourhood of 7.5 per cent of the labour force.

The rate of inflation declined in 1976, but progress on this front was slow and uneven. The increase in the consumer price index for the year as a whole was about 7.5 per cent, compared with 10.8 per cent in 1975. The increase in the price index of the GNP, the most comprehensive measure of the inflation rate, was about 9.5 per cent, compared with 10.7 per cent in 1975. There was a more marked reduction in the rate of wage rate increases in 1976; base rate wage increases in new settlements in the third quarter of 1976 averaged 9.7 per cent, compared with 17.0 per cent in the third quarter of 1975. However, these rates of increase in base rate wage settlements continued to be well above those in the United States, with consequent adverse effects on Canada's cost and price competitive position.

The deficit on the current account of Canada's balance of payments with other countries was somewhat reduced in 1976, to \$4.1 billion from the \$5.0 billion in 1975, but both of these deficits were exceptionally large by past standards. This improvement in the overall current account position in 1976 was more than accounted for by a swing from deficit to surplus in the merchandise trade account of about \$2 billion, but this favourable swing was partly offset by an increase of around \$1 billion in the deficit on services, reflecting a sharp jump in the deficits on the interest and dividend account and on tourist and travel transactions.

The large deficit on the overall current account of the balance of payments was covered in 1976 by continued heavy reliance on borrowing from non-residents. In the 12 months ending September 1976 new issues placed by Canadian governments and businesses with non-residents amounted to \$9.3 billion, most of which represented borrowed funds. This heavy inflow of capital from abroad, encouraged by higher levels of interest rates in Canada than in other countries, kept the exchange value of the Canadian dollar at a premium in relation to the US dollar throughout most of 1976. And this high exchange value of the Canadian dollar,

buoyed up by the capital inflow, had the effect of making imports cheaper to Canadians and making our exports more expensive to foreign buyers, thus adding to the difficulties of reducing the large deficit on current account.

The various levels of government remained heavily in deficit in 1976. The shortfall in revenue collections associated with the losses in income and output created by the recession, combined with increased unemployment payments, produced a deficit for all levels of government together of \$4 billion in 1975. In 1976, despite the efforts to control the growth of government spending, the overall government deficit remained in the neighbourhood of \$4 billion. In effect the 1976 deficit was simply a reflection of the fact that the rise of 5 per cent in real GNP in 1976 was not sufficient to begin to reduce the gap between actual and potential output or to reduce the government revenue shortfalls and unemployment payments associated with it.

At the end of 1976 three new developments emerged, with significant implications for Canada's economic prospects in 1977. The election of a separatist government in the province of Quebec on November 15th injected new uncertainties into an economic situation that had already weakened and was being accompanied by growing economic difficulties. In late December the Organization of Petroleum Exporting Countries announced a further increase in the international

A styrene plant at Sarnia, Ont.





Unloading beets at Canadian Sugar Factories in Taber, Alta.

price of oil—a development that would affect Canada both directly and, perhaps even more importantly, indirectly through its effects on our trading partners. Finally, at the end of the year the Organization for Economic Co-operation and Development announced that it was scaling down its forecasts of economic prospects for the industrialized world in 1977 by a substantial amount.

Against this background the outlook for Canada in 1977 was for a slower rate of economic growth and some further modest rise in the unemployment rate. It was expected that there would continue to be a large deficit in the current account of the balance of payments and an even larger deficit in the positions of the three levels of government than in 1976. Most forecasters were suggesting a rate of increase in real GNP of between 3 and 4 per cent for 1977, compared with about 5 per cent in 1976. This implied a further widening of the GNP gap, with the Canadian economy operating even further below its capacity levels than in 1976 and with a loss in income and output in excess of \$15 billion a year. It also implied an unemployment rate above 7.5 per cent of the labour force.

With record levels of grain crop production and moderating wage rate increases, the outlook for inflation in 1977 was relatively favourable. No acceleration in the rate of inflation was expected and there were good prospects for some further modest reduction in the rate at which prices rose.

Finally, the major industrialized countries had indicated a determination to take appropriate stimulative measures to restore the momentum of the recovery. Such measures, operating with a lag, may have done little to improve the performance of the world economy in 1977, but it was expected that they would help to pave the way for more buoyant and vigorous growth in 1978.



Workers picking peaches in the Niagara Peninsula of Ontario.

Natural Wealth

Agriculture

Farming is carried on in all provinces of Canada and in a limited way in a few areas of the Yukon Territory and the Northwest Territories. Although there are exceptions, especially in the Peace River area of Alberta and British Columbia, farms are for the most part scattered within a 320 km (kilometre) strip along Canada's southern boundary. There are currently 300,118 farms in Canada, according to a revised census definition of what constitutes a farm.

Average farm size has increased from 187 ha (hectares) in 1971 to over 200 ha in 1977. Originally settlement in eastern Canada was planned on the basis of 40 ha per

farm and farms in western Canada were laid out in 65 ha parcels; today there is a considerable range in size in all farming regions. As the number of farms has decreased most of the land has been added to the farms that remain, with the consequence that current farm areas are usually multiples of 40 or 65 ha.

There are about 70 000 000 ha of land in agriculture in Canada, of which some 42 000 000 ha are improved and used for intensive production; the unimproved land is generally unsuited for cultivation and used mainly for grazing purposes, although in some regions much of this type of land is covered with bush and forest. Although the amount of land used in agriculture has slightly decreased in recent years, the amount of improved land has remained relatively constant. Because of climatic restrictions and present economic circumstances, very little additional land is likely to be brought into agricultural production in the near future.

Approximately 5 per cent of Canada's labour force is employed in farming. Although there was a slight increase in 1974 and 1975, the steady decline in the agricultural work force that took place before 1974 is now continuing. The disappearance of farm labour as rural populations migrated to developing urban centres resulted in an extensive mechanization of agriculture. As a consequence of this and of the relatively rapid acceptance of new technology by farmers, productivity per worker increased in agriculture at a more rapid rate than in non-agricultural industries. From 1960 to 1975 the output per worker in agriculture increased by 54 per cent, compared with a 44 per cent increase in other industries. The average current output of one farm worker provides food for over 50 people.

A field plowed and ready for planting.





Infrared photography shows the variety of crops growing in Prince Edward Island.

Farms that are owned and operated by farm families dominate the agricultural picture in all parts of Canada. Only about 2.1 per cent of farms are incorporated and approximately 1.9 per cent are family farm corporations. About 5.6 per cent of farms are operated as partnerships, many of which include individuals who are closely related. In the 1971 Census 69 per cent of farm operators owned the land they operated, 26 per cent partly owned and partly rented their farm land and 5 per cent operated only rented land.

Although farming takes place in every province, 79 per cent of Canada's farm land is in the Prairies; this is reflected in farm income figures. In 1975 total net farm income was \$4,328 million, distributed as follows: British Columbia, \$147 million; the Prairie provinces, \$2,751 million; Ontario, \$921 million; Quebec, \$449 million; and the Maritime provinces, \$60 million. The total capital value of farm real estate, livestock and machinery in 1975 was estimated to be \$42,531 million.

There are many types of farms in Canada, but most may be roughly classified as one of the following: grain, dairy, livestock (excluding dairy), combination grain and livestock, and specialty crops. Specialty crops include fruits, tobacco, potatoes and vegetables.

Grain and oilseeds constitute 62 per cent of the value of exports. Although Canadian agricultural products are exported to many parts of the world, the countries of the European Communities are Canada's most important agricultural export market. Agricultural exports account for over 12 per cent of the total value of all Canadian exports and agriculture provides about 2.7 per cent of gross national product (GNP).

Besides providing an abundance of food, agriculture benefits the country in many ways. Transportation charges resulting from the movement of agricultural products

provide revenue to Canada's railway companies, shipping companies and port facilities. The processing of farm products and the manufacture of farm machinery, equipment, fertilizers and other supplies sold to farmers contribute to industrial employment. Farm operators are also an important market for building materials, petroleum products, electric power, veterinary services and other necessities. At the rural retail level many people depend on farmers' purchases of goods and services for their livelihoods.

Field Crops

Spring wheat was grown on more than 9 500 000 ha of the Prairies in 1976. Historically, wheat has contributed significantly to the Prairie economy in particular and to the Canadian economy as a whole. Farm cash receipts for wheat in 1976 amounted to \$2,063 million, a decrease of \$400 million from 1975. Wheat is also a significant contributor of foreign exchange for Canada; in 1976, 10 680 000 t (metric tonnes) of wheat were exported—over 75 per cent of the total crop.

However, wheat is not the only grain grown in Canada; oats and barley (particularly in the Prairies) and corn (in Ontario) are essential to the Canadian livestock industry. In 1976 Prairie farmers grew 13 850 000 t of oats and barley and total Canadian production of these grains amounted to 15 265 000 t.

The oilseeds—rapeseed, flaxseed, soybeans and sunflower seeds—make up the third major type of field crop. These crops are processed to produce vegetable oils for human consumption or industrial use and high-protein meal for livestock feed. Production of rapeseed, flaxseed and sunflower seed is centred in the Prairie provinces, that of soybeans in Ontario. In 1976 there were 789 100 ha planted to rapeseed, 354 100 ha to flaxseed, 149 700 ha to soybeans and 20 200 ha to sunflower seeds. Production amounted to 916 000 t of rapeseed, 297 000 t of flaxseed, 252 000 t of soybeans and 24 000 t of sunflower seeds.

Outside the Prairies, field crop production is more diversified. The degree of emphasis placed on livestock production influences the kinds of field crops grown and the proportion of land devoted to forage crops, pasture and feed grains. In Ontario, grain corn is an important crop for livestock feed as well as for industrial uses; in 1976 production amounted to 3 378 000 t. Grain corn is also becoming increasingly important in Quebec. Besides grain corn, Ontario also produced 8 777 000 t of fodder corn in 1976.

Although it is raised in relatively small areas, tobacco has a high cash value. Most of Canada's tobacco production is centred in Ontario, but some takes place in Quebec and a smaller amount in the Maritimes. Winter wheat and vegetables are other important sources of income for Ontario farmers.

Horticultural Crops

The fruit and vegetable industry is an important part of the agricultural and food distribution sectors of the economy. Fresh and processed fruits and vegetables account for more than one third of the quantity of all food consumed in Canada. There are over 30 fruit and vegetable crops grown commercially in Canada. The annual farm value of these crops in 1975 amounted to \$570 million.



By far the most important fruit crop grown in Canada is the apple, which accounts for over 33 per cent of the value of commercial Canadian fruits. Commercial apple orchards are found in Nova Scotia, New Brunswick, southern Quebec, Ontario and the interior of British Columbia, particularly in the Okanagan Valley. Tender tree fruits—pears, peaches, cherries and plums—are also grown in Ontario, with the most important concentrations in the Niagara region and in Essex County. These fruits, as well as apricots, are also grown on a large scale in the southern part of the Okanagan Valley in British Columbia.

In addition to tree fruits, strawberries and raspberries are cultivated commercially in the Maritimes, Quebec, Ontario and British Columbia. On land near urban areas many such operations are being rapidly converted from the traditional farm harvesting to "pick your own" harvesting. British Columbia fruit growers also produce loganberries commercially in the lower mainland and on Vancouver Island. Grapes are grown in the Niagara District of Ontario and in the Okanagan Valley of British Columbia; grape production increased about 50 per cent between 1972 and 1976, reflecting the increasing acceptance of Canadian wines during that period. The native blueberry is found wild over large areas in Canada and is harvested in commercial quantities in the Atlantic provinces and Quebec; a cultivated crop is grown in British Columbia.

The production of field-grown vegetables in Canada is seasonal. During the winter, when no domestic vegetables are being harvested outside of greenhouses, supplies of most fresh vegetables are imported from the US. During the growing season varying percentages of domestic requirements are met by Canadian crops.

Tomato plants in a greenhouse in Quebec.





A field of cabbages, PEI.

Some vegetables are exported from Canada, particularly to a few large centres of population in the US close to the border.

Potatoes are the most important of the vegetables produced in Canada. Production slightly exceeds consumption and about 3 per cent are exported. Potatoes are produced commercially in all provinces except Newfoundland, with the Maritimes accounting for nearly 43 per cent of Canadian production. Soil and weather conditions combine to make regions within the Maritime provinces ideal potato-growing areas.

The processing industry plays an important part in the marketing of Canadian-grown fruits and vegetables. Over the years factories have been built in most of the important growing regions and considerable portions of the fruit and vegetable crops are canned, frozen or otherwise processed each season, especially asparagus, beans, peas, corn and tomatoes. In recent years the importance of freezing has been increasing. Many vegetables for processing are grown under a system whereby the processor contracts annually with the grower for a certain amount.

Over the past several years the processing of canned tender tree fruits has declined considerably and imports have increased rapidly; in 1975 this situation continued. Over the past 25 years the weight and value of exported vegetables have varied considerably; however, in the same period vegetable imports have doubled.



Yearling Hereford cattle being herded back from summer pasture in the foothills of Alberta.

In 1975 the supply of domestic and imported fruits and vegetables remained relatively unchanged from 1974. The 1975 per capita domestic disappearance of all fruits, 132.68 kg (kilograms) fresh equivalent weight, was marginally higher than in 1974 and remained above the five-year (1970-74) average of 118.72 kg. Of this total 59.43 kg per capita were fresh, 1.39 kg were frozen, 21.95 kg were canned, 5.66 kg were dried and 32.20 kg were made into juice; jams, jellies and marmalades accounted for 0.64 kg per capita and unspecified uses for 11.41 kg. The per capita disappearance of vegetables (excluding potatoes) was 56.60 kg in 1975 and this represented an increase from the five-year (1970-74) average of 53.43 kg. The total included 42.83 kg of fresh vegetables, 10.16 kg of canned vegetables and 3.61 kg of frozen vegetables.

Including potatoes and mushrooms there were 271.92 kg of fruit and vegetables per capita available for consumption in Canada in 1975.

The farm value of greenhouse industry sales jumped from \$103.5 million in 1974 to \$129.4 million in 1975; the production of greenhouse tomatoes and cucumbers alone accounted for 16 per cent of industry sales. However, the benefits of this growth were somewhat offset by the fact that fuel and other costs also rose; the

average fuel expenditure per farm jumped 24 per cent. The total area operated under glass and plastic in the greenhouse industry increased only marginally.

In 1975 nurseries had a total revenue of \$103.6 million, an increase of 20 per cent from 1974. Approximately 40 per cent of this represented growers' sales of traditional fruit and nursery stock and 35 per cent was earned by supplying the increasing demand for contracted services.

Maple syrup is produced commercially in Nova Scotia, New Brunswick, Quebec and Ontario. In 1975 Canada produced 6 193 000 L (litres) of maple syrup, 153 t of maple sugar and 191 t of maple taffy. The bulk of the crop comes from the Eastern Townships of Quebec, a district famous in both Canada and the US as the centre of the maple products industry. Virtually all of the maple syrup we export goes to the US. Much of the syrup sold in Canada is marketed in one-gallon (4.55 L) cans direct to the consumer from the producer, but a considerable amount of both sugar and syrup is sold each year to processing firms.

Honey production was greater in 1976 than in 1975. Honey is produced commercially in all provinces except Newfoundland and honey bees are kept in some districts for the added purpose of pollinating certain fruit and seed crops. Yields naturally vary to some extent from year to year, but Alberta is consistently the largest producer, supplying 37 per cent of Canada's honey crop in 1976. To facilitate storage, shipment and uniformity of quality, large quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. In 1975 Canada exported 4 702 720 kg of honey valued at \$4.8 million, up substantially from the 3 171 429 kg exported in 1974. Exports went mainly to the Federal Republic of Germany and the US.

Livestock

Preliminary estimates for 1976 indicate that total cash receipts from farm produce were \$9,738 million, of which \$4,889 million came from livestock and animal products. Cattle (including calves) and pig sales in 1976 amounted to \$1,818 million and \$820 million respectively. Cash receipts from the sale of sheep and lambs in 1976 were \$13.9 million.

On July 1, 1976, the number of cattle and calves on farms in Canada (not including Newfoundland, which had 7,061 head at the time of the June 1, 1976, Census) was estimated at 14,676,000, down 4 per cent from 15,263,000 on July 1, 1975. Beef cows, estimated at 4,043,500, were down 8 per cent, while beef heifers were up 4 per cent to 1,644,900 from 1,578,700 on July 1, 1975. Steers were up 1 per cent, while calf numbers showed a decrease of 6 per cent.

Inspected slaughter of cattle in 1976, as reported by Agriculture Canada, was up 10.1 per cent to 3,676,284, while calf slaughter showed a decrease of 3.9 per cent, moving from 682,094 in 1975 to 655,443 in 1976.

Agriculture Canada also reports that exports of slaughter cattle (90 kg and more) to the US amounted to 249,738, an increase of 123 per cent from 112,063 head in 1975, while feeder cattle (90 kg and more) increased 90.0 per cent from 28,762 in 1975 to 54,693 in 1976.

The weighted average price per 100 kg of A1 and A2 steers at Toronto was \$19.00 in 1976—11 per cent below the 1975 price of \$21.31.

Table 1. Estimated meat production and disappearance, 1975 and 1976

Animal	Year	Animals slaughtered	Meat exports		Production		Domestic disappearance		Per capita disappearance	
		No.	t	'000 lb	t	'000 lb	t	'000 lb	kg	lb
Beef.....	1975	4,069,900	20 325	44,808	993 773	2,190,873	1 057 550 ^r	2,331,477 ^r	46.3	102.1
	1976	4,376,100	58 547	129,073	1 087 019	2,396,441	1 159 192	2,555,554	50.1	110.4
Veal.....	1975	1,008,800	1	1	55 463	122,273	55 463	122,273 ^r	2.4	5.4
	1976	973,600	1	1	52 055	114,760	51 425	113,372	2.2	4.9
Pork.....	1975	8,803,300 ^r	40 682	89,687	520 948 ^r	1,148,497 ^r	527 560 ^r	1,163,074 ^r	23.1	50.9
	1976	8,617,200	39 165	86,344	511 918	1,128,574	557 043	1,228,056	24.1	53.1
Mutton and lamb.....	1975	423,500	85	187	8 205	18,090	29 591	65,237	1.3	2.9
	1976	409,900	125	276	7 913	17,446	24 689	54,429	1.1	2.4
Offal.....	1975	...	26 973	59,465	59 364	130,873	35 419	78,084	1.5	3.4
	1976	...	27 149	59,853	62 817	138,487	62 817	84,055	1.6	3.6

^r Included with beef.

^r Revised figures.

... Not applicable.

Table 2. Per capita disappearance of meats on a cold dressed carcass weight basis

Year	Beef		Veal		Mutton and lamb		Pork		Offal		Canned meat		Total	
	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb
1935	24.3	53.6	4.4	9.8	2.7	6.0	17.8	39.3	2.5	5.5	0.7	1.5	52.5	115.7
1940	24.7	54.5	4.9	10.8	2.0	4.5	20.3	44.7	2.5	5.5	0.6	1.3	55.0	121.3
1945	29.7	65.4	5.6	12.4	2.0	4.3	23.9	52.8	2.5	5.6	1.5	3.3	65.2	143.8
1950	23.0	50.8	4.3	9.4	1.0	2.2	24.9	55.0	2.2	4.9	2.3	5.1	57.8	127.4
1955	31.3	69.1	3.8	8.4	1.2	2.6	22.3	49.2	2.4	5.3	1.9	4.2	63.0	138.8
1960	31.8	70.0	3.1	6.9	1.3	2.9	23.9	52.6	2.2	4.8	2.9	6.4	65.1	143.6
1966 ¹	38.1	84.0	3.1	6.9	1.8	3.9	21.3	47.0	1.6	3.6	1.9	4.2	67.9	149.6
1967 ¹	37.7	83.2	3.2	7.0	1.9	4.2	24.7	54.5	1.8	3.9	2.1	4.7	71.4	157.5
1968 ¹	38.6	85.1	3.1	6.8	2.2	4.9	24.3	53.5	1.7	3.7	2.1	4.7	72.0	158.7
1969 ¹	38.8	85.6	2.3	5.1	2.3	5.0	23.3	51.4	1.7	3.8	2.1	4.6	70.5	155.5
1970 ¹	38.3	84.4	2.1	4.6	2.1	4.6	26.6	58.7	1.5	3.4	2.1	4.7	72.8	160.4
1971 ¹	40.5	89.2	2.1	4.7	1.5	3.3	31.0	68.3	2.0	4.4	..	..	77.1	169.9
1972	42.0	92.5	1.6	3.5	2.1	4.7	27.7	61.0	1.9	4.1	..	..	75.2	165.8
1973	41.6	91.8	1.4	3.1	1.7	3.7	26.1	57.6	1.6	3.6	..	..	72.5	159.8
1974	43.0	94.7	1.6	3.5	1.1	2.5	27.2	59.9	1.7	3.7	..	..	74.5	164.3
1975	46.4	102.3	2.4	5.4	1.3	2.9	23.1 ^r	50.9 ^r	1.5	3.4	..	..	74.7 ^r	164.9 ^r
1976	50.1	110.4	2.2	4.9	1.1	2.4	24.1	53.1	1.6	3.6	..	..	79.1	174.4

¹ Intercensal revision.
^r Revised figures.
.. Not available.

On July 1, 1976, pigs on farms (not including Newfoundland, which had 15,795 at the June 1, 1976, Census) numbered 5,504,000, up 4 per cent from July 1, 1975. Pigs slaughtered in federally inspected plants during 1976 totalled 7,490,748 according to Agriculture Canada, a decrease of 2.2 per cent from 1975. In addition to decreased slaughter, the weighted average price at Toronto of \$29.08 per 100 kg for Index 100 hogs was also down, from \$30.49 in 1975. Agriculture Canada reports that total exports of dressed pork were down 10 per cent to 38 795 000 kg in 1976 from 43 225 000 kg in 1975.

The sheep and lamb population of Canada (not including Newfoundland, which had 9,159 at the June 1, 1976, Census) declined to 641,300 by July 1976 from 702,600 in July 1975, a drop of 9 per cent. The West showed a drop of 10 per cent, the East a drop of 6 per cent. Federally inspected slaughter of sheep and lambs, as reported by Agriculture Canada, showed a very slight increase to 186,977 head in 1976, as opposed to 186,566 in 1975. Exports of sheep and lambs to the US were up to 3,329 in 1976 from 2,937 in 1975. Imports of slaughter sheep and lambs increased from 51,608 in 1975 to 61,504 in 1976.

Dairying

July 1, 1976, estimates place the number of milk cows in Canada at 2,048,000. During 1975 they produced 8 017 222 000 kg of milk. Although the dairy industry is important in every province in Canada, production is concentrated in the more densely populated regions of Quebec and Ontario. These two provinces accounted for 74.5 per cent of the country's milk supply in 1975.

The most important manufactured dairy products were butter, cheese, concentrated milk products and ice cream mix; approximately 63 per cent of the total milk supply was used this way. Fluid milk sales accounted for 31 per cent and farm use made up the remaining 6 per cent. Farm use figures include milk fed to livestock, farm home consumption and, previous to 1974, farm-made butter.

Dairy farms have been decreasing in numbers but increasing in size during the past decade. In the census years of 1961, 1966 and 1971 there were, respectively, 309,000, 222,000 and 145,000 farms reporting milk cows. The principal dairy breeds

Dairy cattle at Expo Agricole, an agricultural exhibition in Chicoutimi, Que.



Table 3. Milk production and utilization, by regions, 1974-75

Region	Year	Total milk production		Milk used for dairy factory products		Fluid milk sales		Milk used on farms	
		t	'000 lb	t	'000 lb	t	'000 lb	t	'000 lb
Maritimes	1974	329 863	727 224	134 158	295 767	175 870	387 728	19 835	43 729
	1975	348 420	768 137	151 289	333 536	176 595	398 326	20 536	45 275
Quebec and Ontario	1974	5 650 485	12 457 186	3 694 911	8 145 885	1 667 468	3 676 137	288 106	635 164
	1975	5 975 533	13 173 794	4 036 738	8 899 483	1 625 077	3 582 682	313 718	691 629
Prairies	1974	1 182 534	2 607 042	620 013	1 366 895	403 778	890 179	158 743	329 968
	1975	1 199 178	2 643 737	661 306	1 457 931	400 217	882 328	137 655	303 478
British Columbia	1974	462 725	1 020 135	141 693	312 380	298 256	657 543	22 776	50 212
	1975	494 089	1 089 281	166 401	366 852	299 796	660 938	27 892	61 491
Totals, Canada	1974	7 625 607	16 811 587	4 590 775	10 120 927	2 545 372	5 611 587	489 460	1 059 073
	1975	8 017 220	17 674 949	5 015 734	11 057 802	2 501 685	5 515 274	499 801	1 101 873

Table 4. Summary of supply and disposition of poultry meat and eggs, 1975

Total poultry meat ¹		Fowl ¹		Chicken ¹		Turkey ¹		Goose ¹		Duck ¹		Eggs	
'000 kg	'000 lb	'000 kg	'000 lb	'000 kg	'000 lb	'000 kg	'000 lb	'000 kg	'000 lb	'000 kg	'000 lb	'000 doz	'000 doz
Stocks at January 1	40 874	90 110	2 350	5 181	15 787	34 804	22 220	48 987	88	195	428	943	5 086
Production	406 542	896 263	30 613	67 489	285 229	628 815	85 989	189 572	955	2 105	3 757	8 282	444 925
Imports	12 874	28 383	554	1 221	9 266	18 935	2 353	5 187	—	—	702	3 040	12 092
Total	460 290	1 014 756	33 517	73 891	310 282	682 554	110 562	243 746	1 043	2 300	4 887	12 265	462 103
Exports	3 112	6 861	121	267	2 063	4 549	536	1 181	392	864	—	—	10 681
Stocks at December 31 ..	22 054	48 620	2 504	5 520	7 181	15 832	12 109	26 696	3	6	257	566	4 291
Eggs used for hatching ..	—	—	—	—	—	—	—	—	—	—	—	—	24 061
Domestic disappearance ..	435 124	959 275	30 892	68 104	301 038	662 173	97 917	215 869	648	1 430	4 630	11 699	423 070
Per capita consumption ..	19.1	42.1	1.4	3.0	13.2	29.0	4.3	9.5	0.03	0.06	0.23	0.51	18.5

¹ Eviscerated weight.
— Nil or zero.

Table 5. Number and value of pelts produced, by kind, 1973-74 and 1974-75

Kind	1973-74			1974-75		
	Number	Value \$	Average value \$	Number	Value \$	Average value \$
Wildlife						
Badger	5,134	110,507	21.52	3,626	56,990	15.72
Bear:						
Black or brown.....	4,261	221,134	51.90	3,585	114,635	31.98
Grizzly	27	7,550	279.63	20	5,249	262.45
White	546	618,024	1,131.91	548	347,706	634.50
Beaver	431,071	9,072,632	21.05	357,732	5,990,920	16.75
Cougar	40	3,233	80.82	33	3,404	103.15
Coyote or prairie wolf.....	87,139	3,169,119	36.37	44,366	1,416,512	31.93
Ermine (weasel).....	55,968	57,463	1.03	88,098	81,011	0.92
Fisher or pekan	12,566	613,347	48.81	10,163	463,739	45.63
Fox:						
Blue	208	4,909	23.60	207	4,226	20.42
Cross and red	63,321	2,650,470	41.86	43,103	1,450,227	33.65
Silver	533	24,406	45.79	429	13,827	32.23
White	53,415	1,727,350	32.34	31,913	593,249	18.59
Not specified.....	17,674	859,465	48.63	13,563	429,575	31.67
Lynx	35,372	3,071,387	86.83	20,648	2,331,933	112.94
Marten	62,356	907,428	14.55	47,598	538,250	11.31
Mink	68,425	1,143,721	16.71	63,083	688,792	10.92
Muskrat	1,434,871	3,728,490	2.60	1,762,589	4,519,164	2.56
Otter	18,016	739,146	41.03	15,258	629,655	41.27
Rabbit	15,308	5,719	0.37	8,353	3,595	0.43
Raccoon	73,442	1,075,603	14.65	81,504	1,015,354	12.46
Seal:						
Fur seal—North Pacific ¹ ..	9,169	432,860	47.21 ²	7,543	344,312	45.65 ²
Hair seal ^{3,4}	130,496	1,789,748	13.71	157,472	3,074,246	19.52
Skunk	867	1,283	1.48	596	862	1.45
Squirrel	183,309	151,700	0.83	469,093	336,755	0.72
Wildcat	4,129	225,095	54.52	3,425	133,235	38.90
Wolf	5,088	230,090	45.22	5,510	246,957	44.82
Wolverine	1,242	105,646	85.06	1,090	115,328	105.81
Sub-total	2,773,993	32,747,525	...	3,241,148	24,949,708	...
Ranch-raised⁵:						
Fox	1,395	137,254	98.39	1,545	162,024	104.87
Mink	1,065,808	19,184,688	18.00	1,112,557	16,425,262	14.76
Sub-total	1,067,203	19,321,892	...	1,114,102	16,587,286	...
Total	3,841,196	52,069,417	...	4,355,250	41,536,994	...

¹ Commonly known as Alaska Fur seal. The value figures are on the net returns to the Canadian government for pelts sold.

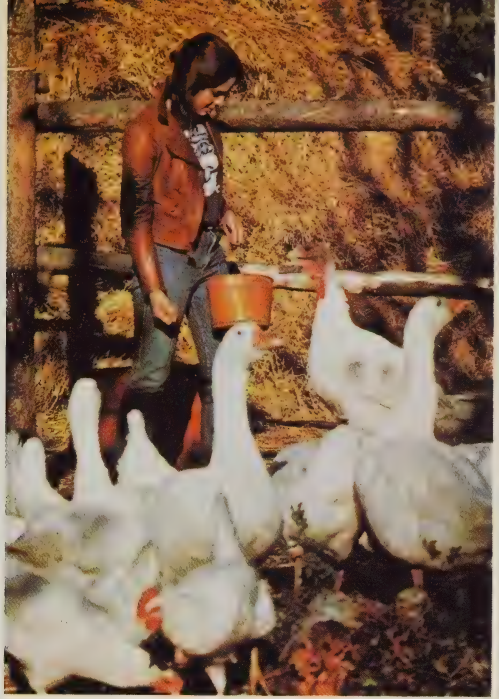
² The gross average realized price per pelt sold was \$97.46 in 1973-74 and \$66.83 in 1974-75.

³ Includes data for the Maritime provinces.

⁴ Hair seal data are based on calendar years 1974 and 1975, except for the Northwest Territories, which are on a fur year ending June 30.

⁵ Ranch-raised data are based on calendar years 1973 and 1974.

... Not applicable.



in Canada are Holstein, Ayreshire, Guernsey and Jersey. During 1975 the farm value of milk production was approximately \$1,444 million; the farm value of milk used in factories was \$758 million and that for fluid sales \$619 million.

Poultry and Eggs

A high degree of specialization and concentration has been developing recently in the production of poultry and eggs, particularly in the egg, broiler chicken and turkey industries. The egg industry itself, for example, is further specialized into fields such as hatching eggs, started pullets and shell eggs for the table; over 80 per cent of eggs are produced by about 5 per cent of producers. The production of broiler chickens and turkeys has comparable features and a few very large enterprises account for most of the geese and ducks produced in the country.

The producers of eggs, turkeys and broiler chickens operate within the constraints of supply-management programs directed by provincial producer marketing boards. The activities of egg producers and turkey producers at the provincial level are co-ordinated by national agencies (the Canadian Egg Marketing Agency and the Canadian Turkey Marketing Agency, respectively), which operate under federal government charters.

Furs

Fur statistics have been collected and published annually since 1920. For the 1974-75 fur season the reported harvest of pelts was 4,355,250, a 13 per cent increase from the 3,841,196 pelts harvested in 1973-74. The value, however, decreased to \$41,536,994 from the 1973-74 figure of \$52,069,417. The value of wildlife pelts in 1974-75 was \$24,949,708, or 60 per cent of total pelts; the value of pelts produced by fur farms decreased from \$19,321,892 to \$16,587,286 for the 1974-75 season.



Ice fishing for trout near Repulse Bay, NWT.

Fisheries

After several years of steadily declining catches, Canada's fish harvest in 1975 gave the first indications of a stabilizing trend, together with the promise of a resurgence of the nation's oldest primary industry.

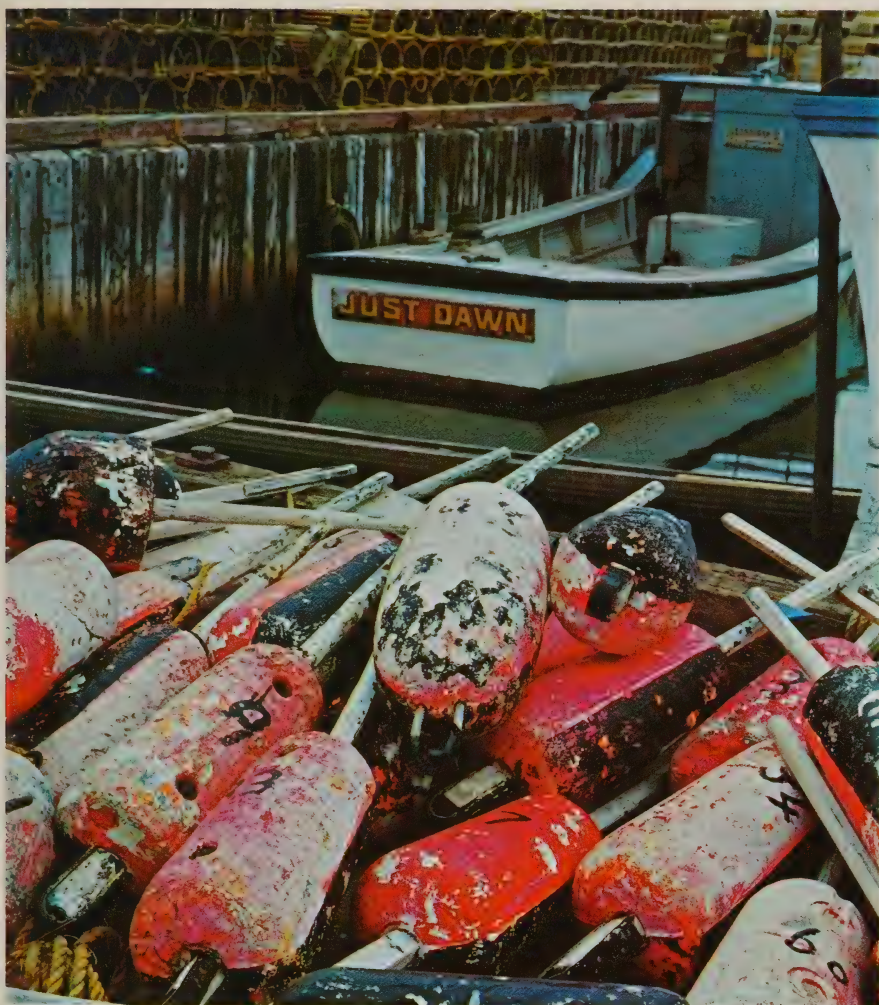
Total landings in Canada in 1975 amounted to 981 000 t, compared to 969 000 t in 1974. Returns to fishermen from the catch totalled \$291 million, approximately the same as in the previous year.

However, the value of Canadian exports of fishery products continued to rise, with the 1975 total valued at \$461 million, up by \$24 million over 1974. Following the trend of previous years, some 82 per cent of Canadian exports went to the US and to European countries.

Intensive efforts have been made by the federal government to assist the Atlantic Coast groundfish fishery and other distressed sectors of the industry by means of various support programs. At the same time Canada continued to push for international recognition of the need to establish a viable balance between fishing effort and the state of the resources. Forceful representations at sessions of the International Commission for the Northwest Atlantic Fisheries resulted in sizable reductions in the catch quotas allocated to foreign countries that fish the heavily-exploited fishing grounds off Canada's Atlantic Coast.

Canada continued to play a major role at the United Nations (UN) Law of the Sea negotiations, seeking support of changes in international sea law. On January 1, 1977, the government officially extended Canadian fishing jurisdiction to 200 miles off both east and west coasts.

Landings on the Atlantic Coast in 1975 totalled 805 000 t, up 24 t from the previous year. In the course of five years Atlantic Coast landings have declined by more than

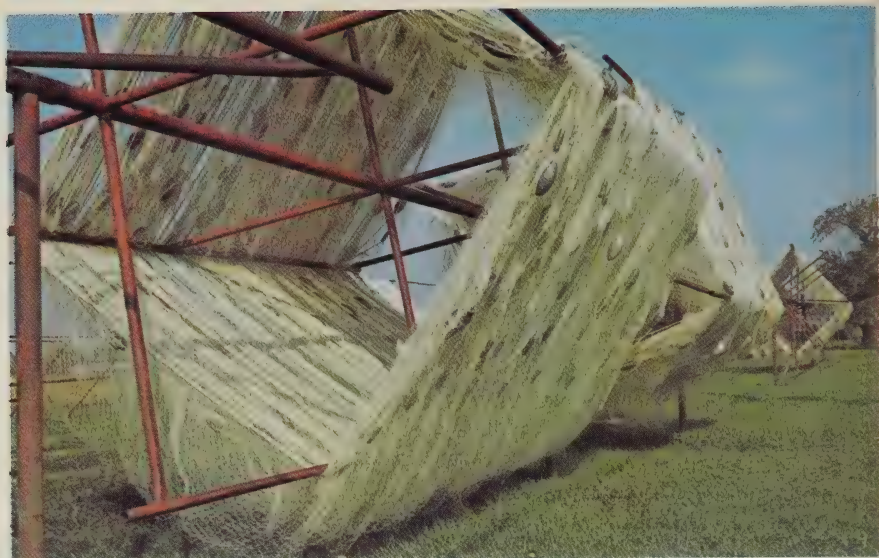


Lobster pots and buoys ready for use in the fisheries off Prince Edward Island.

370 000 t. A series of factors, such as severe ice conditions and a strike that paralyzed the Newfoundland trawler fleet, affected the level of landings. However, heavy exploitation by foreign fleets remained the most serious problem.

Catches of cod and flatfish accounted for the largest declines over the previous year. However, ocean perch landings of 102 900 t represented a 15 per cent increase over 1974 and lobster, scallop and shrimp catches increased substantially.

A drastic drop in salmon catches was the main factor in the overall decrease in Pacific Coast landings, the 1975 total of 133 000 t entailing a \$22 million reduction in landed value for Pacific Coast fishermen. Halibut landings, however, increased by 1 230 t over 1974.



Fishnets on the shore of Lake Huron near Goderich, Ont.

The market value of all Canadian fisheries products in 1975 was \$694 million, an increase of \$14 million over 1974. Canned fish production was about 40 per cent lower than in the previous year, mainly because of the reduced salmon catch.

The number of commercial fishermen in Canada remained relatively stable at approximately 58,500, of which some 67 per cent were located on the Atlantic Coast and 20 per cent on the Pacific Coast; the remainder were engaged in the inland fisheries. The size of the fishing fleet operating in the sea fisheries was approximately 36,000 vessels.

Forestry

Canada's forests are among our greatest renewable resources. Stretching across the continent in an unbroken belt 966 to 2 092 km wide, they provide raw material for the great lumber, pulp and paper, plywood and other wood-using industries so vital to the country's economy. In addition, the forests of Canada control water run-off and prevent erosion, shelter and sustain wildlife and offer unmatched opportunities for human recreation and enjoyment.

Forest land—that available for producing usable timber—covers more than 320 Mha (megahectares). The total volume of wood on these lands is estimated at 19 063 000 000 m³ (cubic metres), of which four fifths is coniferous and one fifth deciduous.

Three quarters of Canada's productive forest area is known as the boreal forest; it stretches in a broad belt from the Atlantic Coast westward and then northwest to Alaska. The forests of this region are predominantly coniferous, with spruce, balsam

fir and pine the most common species. Many deciduous trees are also found in the boreal forest; poplar and white birch are the most widespread.

The Great Lakes–St. Lawrence and Acadian regions are south of the boreal region. Here the forests are mixed and many species are represented. Principal conifers are eastern white and red pine, eastern hemlock, spruce, cedar and fir; the main deciduous trees are yellow birch, maple, oak and basswood.

Entirely different in character is the coastal region of British Columbia. Here the forests are coniferous and, because of a mild, humid climate and heavy rainfall, very large trees are common—61 m (metres) tall and more than 2 m in diameter. This region contains less than 2 per cent of the country's forest area, but supplies almost one quarter of the wood cut. Species are cedar, hemlock, spruce, fir and Douglas fir.

The coniferous forests of the mountainous regions of Alberta and the British Columbia interior are mixed; distribution and characteristics of species depend on local climate, which ranges from dry to very humid. Production in this area has expanded rapidly in recent years, with the establishment of many new pulp mills.

The only true deciduous forests in Canada occupy a relatively small area in the southernmost part of Ontario, which is predominantly an agricultural district.

Ownership and Administration of Forests

Eighty per cent of Canada's productive forest land is publicly owned. Under the British North America Act, the various provincial governments were given the exclusive right to enact laws regarding management and sale of public lands within their boundaries, including the timber and wood on those lands. In the northern

A "log herder" forming rafts of logs near Sooke, BC.



territories, which contain only about 8 per cent of the country's productive forest land, the forests are administered by the federal government.

For many years the policy of both federal and provincial governments has been to retain in public ownership lands not required for agricultural purposes. In some of the older settled areas of Canada, however, a high proportion of land is privately owned, especially in the three Maritime provinces, where nearly two thirds of the productive forest area is owned by individuals and companies. Thus, the administration and protection of most of Canada's productive forest area is vested in the various provincial governments, which make the forests available to private industry through long-term leasing and other arrangements.

Forest Industries

The forest industries group includes logging, the primary wood and paper manufacturing industries, which use roundwood as their chief raw material, and the secondary wood and paper industries, which use lumber, wood pulp, basic paper, etc., as raw materials to be converted into numerous wood and paper products. This group of industries accounted for approximately 15.8 per cent of all Canadian exports in 1975, down from 17.6 per cent in 1974 mainly because of a large decrease in the quantity and value of lumber exported to the United States.

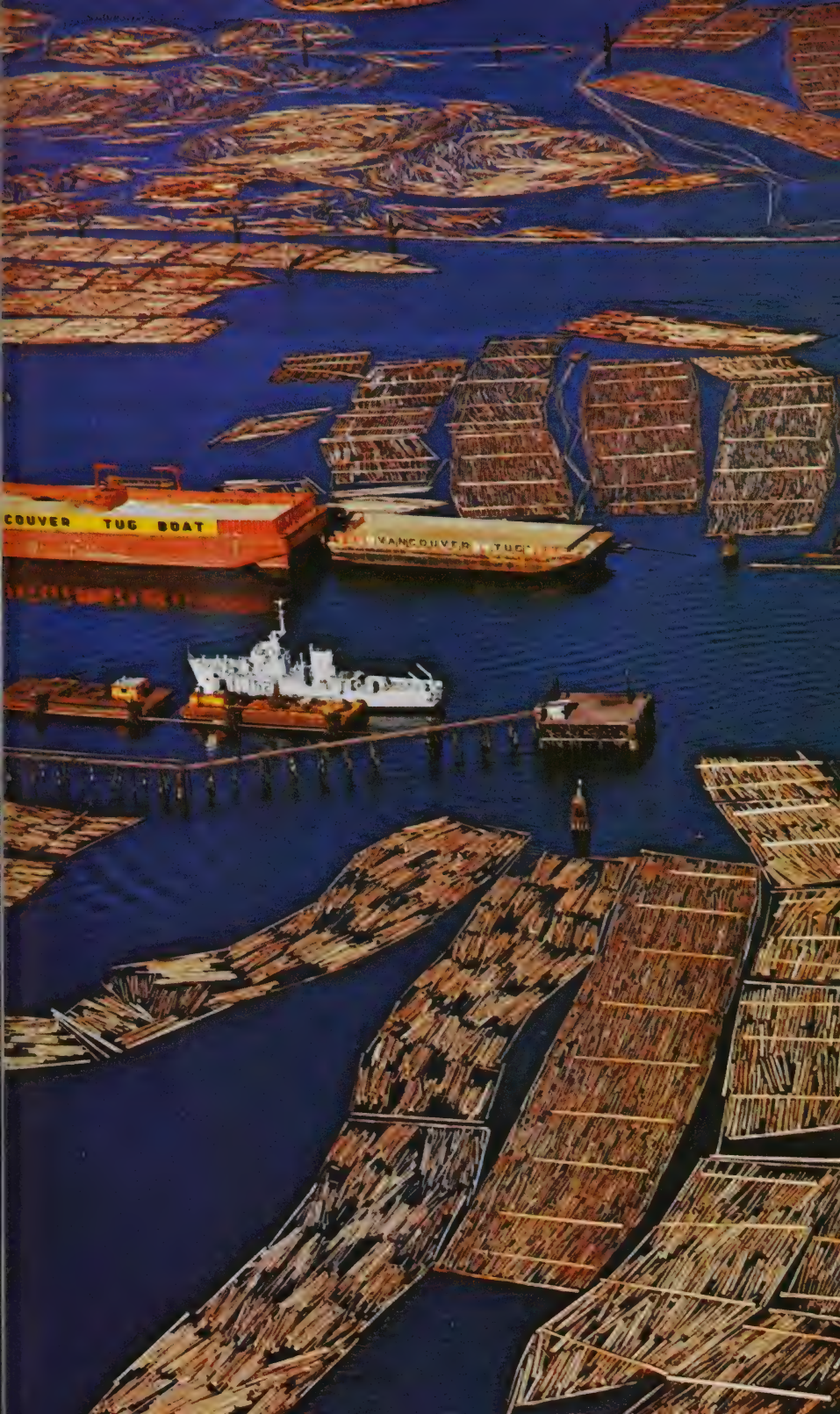
Logging. Production consisting of sawlogs, veneer logs, pulpwood, poles and other roundwood products dropped from an all-time high of 1 438 000 000 m³ in 1973 to 1 379 000 000 m³ in 1974. Sawlog production decreased substantially, from 968 000 000 m³ in 1973 to 853 000 000 m³ in 1974; this was partially offset by a 13 per cent increase in pulpwood production east of the Rockies. British Columbia was hardest hit, with production dropping from 701 000 000 m³ in 1973 to 600 000 000 m³ in 1974.

The value of exports of roundwood increased substantially, from \$31 million in 1973 to \$49 million in 1974. Exports of sawlogs, logs and bolts more than tripled in both quantity and value in 1974.

The value of shipments by the logging industry in 1974 was \$2,733 million, up from \$2,494 million in the previous year as a result of increased unit values rather than of quantities shipped.

In 1974, 50,733 people were employed in logging, an increase of about 2 per cent over 1973; wages in 1974 were \$601 million, compared to \$513 million in 1973.

Sawmills and Planing Mills. This industry is particularly dependent upon the general economic condition of the country and the state of foreign markets, particularly the market in the US. In spite of a slight increase in domestic residential construction starts in Canada and the US, the lumber market continued to fall throughout most of 1975. Lumber production in Canada declined about 16 per cent to an estimated 2 690 000 000 m³ in 1975 from the 3 216 000 000 m³ recorded in 1974. Exports of Canadian lumber dropped 21 per cent from 1 954 824 000 m³ in 1973 to 1 545 922 000 m³ in 1974. The long-term trend toward increased size of individual





A tree shear clamps on to a tree trunk while its curved blades cut the tree near the ground with a minimum of waste and damage.

sawmills and more complete automation is continuing, particularly in the interior of British Columbia, where the sawmill industry is becoming more and more integrated with the pulp and paper industry.

Pulp and Paper. The manufacture of pulp and paper has been Canada's leading industry for many years. Although it is not growing as quickly as some other manufacturing industries in Canada, it still ranks first in employment, in salaries and wages paid and in value added by manufacture. The manufacturing value added by this one industry accounts for 2.1 per cent of Canada's total GNP and it contributed 12.8 per cent to the total value of domestic exports in 1974 (10.6 per cent in 1973). Canada is the second largest producer of wood pulp in the world (19 678 161 t in 1974), after the US (43 743 541 t), and the largest exporter. It is by far the largest producer of newsprint (8 710 418 t in 1974, which is close to 40 per cent of the world total).

Although the pulp and paper industry is engaged primarily in the manufacture of wood pulps and basic papers and paperboard, it also produces converted papers and paperboards and even chemicals, alcohol and other by-products. More than 60 per



A forest ranger's lookout tower in Alberta.

cent of the wood pulp manufactured in 1974 was converted in Canada to other products, particularly newsprint. The rest was exported.

Quebec has the largest share of Canada's pulp and paper industry, accounting for 32.3 per cent of the total value of production in 1974. It is followed by British Columbia, with 28.7 per cent, and Ontario, with 19.7 per cent.

Paper-converting Industries. These include asphalt roofing manufacturers, paper box and bag manufacturers and other paper converters. In 1974 this group had 501 establishments (503 in 1973), employed 45,072 persons (43,053 in 1973) and paid \$428,656,000 in salaries and wages (\$364,092,000 in 1973); the value of factory shipments set a new record of \$1,974,246,000 (\$1,480,089,000 in 1973). In contrast to the basic pulp and paper industry the paper-converting industries are dependent primarily on the domestic market.



Paper production, Port Alfred, Que.

Table 6. Principal statistics of the pulp and paper industry, 1971-74

Item	1971	1972	1973	1974
Establishments No.	142	141	146	147
Employees No.	79,397	78,969	80,085	86,203
Salaries and wages \$'000	745,608	808,869	884,242	1,097,108
Value of shipments of goods of own manufacture \$'000	2,832,267	3,127,821	3,790,939	5,703,192
Value added—manufacturing activity \$'000	1,272,551	1,374,129	1,803,889	3,033,697
Pulp shipped '000 t	5 823	6 698	7 199	7 603
	'000 tons	6,419	7,383	7,936
	\$'000	878,132	976,147	1,301,486
Paper and paperboard shipped '000 t	10 831	11 656	12 213	12 853
	'000 tons	11,939	12,848	13,463
	\$'000	1,751,847	1,925,194	2,252,280
Newsprint exported '000 t	7 074	7 350	7 617	7 846
	'000 tons	7,798	8,102	8,396
	\$'000	1,084,282	1,157,509	1,285,928
				1,721,768

Other Wood Industries. This group includes the shingle mills, veneer and plywood mills and particleboard plants that, like the sawmills and pulp and paper mills, are primary wood industries. It also includes the secondary wood industries that further manufacture lumber, plywood and particleboard into flooring, doors, sashes, laminated structures, prefabricated buildings, boxes, barrels, caskets, woodenware, etc. In 1974 the veneer and plywood industry, the single most important of this group, accounted for \$462,998,000 in shipments of goods of own manufacture and paid their manufacturing employees \$111,879,000 in salaries and wages.



Coal mining in the Fording Valley, BC.

Minerals and Energy

Minerals

Canada is richly endowed with mineral wealth and ranks among the world's largest producers of minerals. A great deal of the country's history is closely entwined with mineral exploration and development, beginning with Frobisher's search for illusory gold in the 16th century. Coal in Nova Scotia and iron ore in Quebec were discovered and later mined in the 17th and 18th centuries. The Geological Survey of Canada, founded in 1842, encouraged the collection of information about Canada's minerals. In the next decade came the first gold rush—to Barkerville in the Cariboo district of British Columbia—and silver, zinc and lead were subsequently found in the Kootenay district. Crews blasting a roadbed for the Canadian Pacific Railway in northern Ontario first revealed the riches in copper and nickel to be found there. The most famous event in Canadian mining history was undoubtedly the Klondike gold rush of 1896, but more significant have been the discoveries in the 20th century of cobalt, silver, uranium, asbestos and potash, as well as more copper, nickel and iron ore.



An iron ore pellet storage pile at Sept-Îles, Que.

The remarkable progress of the Canadian mining industry since World War II is shown by the increase in value of mineral production from \$499 million in 1945 to \$15,393 million in 1976. A measure of the importance of mining to the Canadian economy may be found in the following figures. In 1974 expenditures by mining and exploration companies (excluding the petroleum and natural gas industry) for exploration, development, capital costs and repairs were greater than \$1,431 million; more than 110,000 Canadians were employed in the industry; and about 300 mines were operating. Cities such as Sudbury, Ont., and Trail, BC, depend almost entirely on the mineral wealth in the surrounding area, while Toronto and Calgary are financial centres for the mining and oil industries and many people employed in these cities depend on mining for their livelihoods.

The value of production of Canadian minerals increased to \$15,393 million in 1976, from \$13,338 million in 1975 and \$11,751 million in 1974. Metallic minerals accounted for 34 per cent of the value of Canadian mineral production in 1976. In order of importance, the principal metallic minerals produced in Canada were iron ore, nickel, copper, zinc, gold, silver and lead. Headed by crude oil and natural gas, mineral fuels accounted for 52 per cent of the total value of production. Non-metallic minerals and structural materials accounted for 14 per cent. The main structural materials were cement, sand and gravel, and stone; the non-metallic minerals group was dominated by asbestos, followed by potash and salt. The leading mineral commodity in 1976 was crude oil, with a production value of \$4,128 million, up from \$3,755 million in 1975 and \$423 million in 1960.

Nickel production in Canada in 1976 amounted to 262 492 t valued at \$1,232 million, an increase from 242 180 t valued at \$1,101 million in 1975. Most of Canada's nickel was mined in the Sudbury, Ont., region by INCO Limited and Falconbridge Nickel Mines Limited.

Copper production in 1976 amounted to 747 135 t, valued at \$1,126 million; the figures for 1975 were 733 826 t and \$1,031 million. Canada ranks fourth in the production of copper in the western world. The major producing provinces were British Columbia (273 541 t), Ontario (258 981 t) and Quebec (120 411 t).

Iron ore production in 1976 amounted to 56 902 000 t worth \$1,241 million; in 1975 it was 44 892 530 t worth \$918 million. Zinc production was 1 039 688 t, valued at \$862 million in 1976; in 1975, 1 055 151 t worth \$872 million were mined.

Natural gas production continued at a high level in 1976, with an output of 86 858 171 000 m³ worth \$2,467 million. Production in 1975 was 87 485 758 000 m³ (\$1,521 million); in 1960 it was only 14 810 000 000 m³ (\$52 million).

Natural gas by-products (propane, butanes and pentanes plus) remained in seventh place among Canada's most important minerals. In 1976 production was worth \$794 million, up from \$782 million the previous year.

Asbestos production in 1976 was 1 549 000 t, valued at about \$446 million. Eighty-one per cent of the asbestos produced in Canada came from the province of Quebec; the rest came from British Columbia, the Yukon Territory, Newfoundland and Ontario. Canada produces over 40 per cent of the world's total supply of asbestos and is the world's leading producer.

Stripping the overburden to prepare for open-pit mining of deep-lying lead-zinc ore bodies at Pine Point, NWT.





An oil-drilling rig near Three Hills, Alta.

Cement was the most important structural material produced in Canada, with about two thirds of the production coming from Ontario and Quebec.

Among the minerals of previously lesser importance whose production has increased significantly in the past few years are potash, molybdenum and coal.

The value of Canadian potash production increased from less than \$1 million in 1960 to \$361 million in 1976, as a number of mines were opened in Saskatchewan between 1962 and 1970. About 95 per cent of the world's potash is used as fertilizer.

Canada is second only to the US among the producers of molybdenum. The value of production increased from \$1 million in 1960 to \$92 million in 1976, with over 90 per cent of the Canadian production coming from British Columbia.

Elemental sulphur production decreased from 4 078 780 t in 1975 to 3 781 000 t in 1976 and its value dropped to \$63 million from \$92 million. Natural gas is the major source of elemental sulphur in Canada, so its production is in direct proportion to natural gas production regardless of the price of sulphur. Nearly all sulphur is transformed into sulphuric acid, of which one half is used in the manufacture of fertilizers.

Although gold production increased slightly to 52 444 kg in 1976 from 51 433 kg in the previous year, its value dropped to \$208 million from \$271 million in 1975 because of decreases in world prices.

Coal production increased slightly from 25 258 744 t in 1975 to 25 311 000 t in 1976, with its value increasing from \$586 million to \$604 million.

Table 7. Mineral production, by class, 1965-76
(million dollars)

Year	Metals	Non-metals	Fossil fuels	Structural materials	Total
1965	1,908	327	1,045	434	3,714
1966	1,985	363	1,152	481	3,980
1967	2,285	406	1,234	455	4,380
1968	2,493	447	1,343	440	4,722
1969	2,378	450	1,465	443	4,736
1970	3,073	481	1,718	450	5,722
1971	2,940	501	2,014	507	5,963
1972	2,956	513	2,368	571	6,408
1973 ^r	3,850	615	3,227	677	8,369
1974 ^r	4,821	895	5,202	833	11,751
1975 ^r	4,794	939	6,644	960	13,338
1976	5,241	1,143	7,993	1,016	15,393

^r Revised figures.

Figures may not add to totals owing to rounding.

Table 8. Mineral production, by province, 1974-76

Province or territory	1974 ^r		1975 ^r		1976 ¹	
	Value \$'000	%	Value \$'000	%	Value \$'000	%
Newfoundland	448,559	3.8	550,879	4.1	756,007	4.9
Prince Edward Island	1,454	-	1,787	-	1,700	-
Nova Scotia	80,665	0.7	101,399	0.8	117,201	0.8
New Brunswick	216,584	1.8	231,628	1.7	255,057	1.7
Quebec	1,221,505	10.4	1,239,929	9.3	1,521,321	9.8
Ontario	2,434,579	20.7	2,350,006	17.6	2,594,042	16.9
Manitoba	489,321	4.2	529,619	4.0	478,120	3.1
Saskatchewan	791,409	6.8	861,606	6.5	908,554	5.9
Alberta	4,516,679	38.4	5,737,474	43.0	6,995,572	45.4
British Columbia	1,156,102	9.8	1,296,801	9.8	1,421,096	9.2
Yukon Territory	171,538	1.5	230,150	1.7	131,069	0.9
Northwest Territories	223,050	1.9	206,349	1.5	213,100	1.4
Total	11,751,445	100.0	13,337,627	100.0	15,392,839	100.0

¹ Preliminary estimates.

^r Revised figures.

- Figures too small to be expressed.

Figures may not add to totals due to rounding.

Table 9. Mineral production, by kind, 1975 and 1976

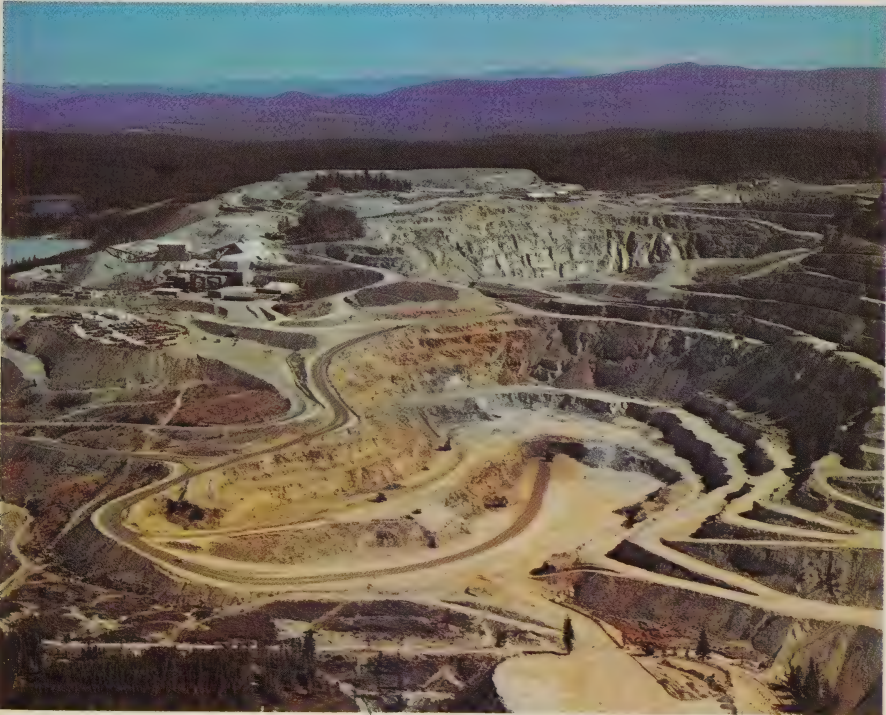
Mineral	1975		1976 ¹	
	'000	'000	'000	'000
Metallics				
Antimony.....	..	..	..	..
Bismuth.....	157 kg	345 lb	154 kg	337 lb
Cadmium.....	1 192 kg	2,627 lb	1 292 kg	2,843 lb
Calcium.....	428 kg	944 lb	558 kg	1,229 lb
Cobalt.....	1 354 kg	2,985 lb	1 373 kg	3,027 lb
Columbium (Cb ₂ O ₅)...	1 662 kg	3,663 lb	1 656 kg	3,650 lb
Copper.....	733 826 kg	1,617,809 lb	747 135 kg	1,647,141 lb
Gold.....	51 kg	1,654 troy oz	52 kg	1,686 troy oz
Indium.....	6 kg	224 troy oz	..	..
Iron ore.....	44 893 t	49,486 tons	56 902 t	62,721 tons
Iron, remelt.....	..	..	..	..
Lead.....	349 133 kg	769,705 lb	259 083 kg	571,175 lb
Magnesium.....	3 826 kg	8,434 lb	5 858 kg	12,914 lb
Mercury.....	414 kg	912 lb	-	-
Molybdenum.....	13 027 kg	28,719 lb	14 416 kg	31,780 lb
Nickel.....	242 180 kg	533,915 lb	262 492 kg	578,693 lb
Platinum group.....	12 kg	399 troy oz	13 kg	430 troy oz
Selenium.....	182 kg	402 lb	260 kg	568 lb
Silver.....	1 234 kg	39,695 troy oz	1 272 kg	40,887 troy oz
Tantalum.....	..	..	..	..
Tellurium.....	20 kg	44 lb	24 kg	53 lb
Tin.....	319 kg	704 lb	275 kg	606 lb
Tungsten (WO ₃).....	1 477 kg	3,258 lb	..	..
Uranium (U ₃ O ₈).....	5 517 kg	12,163 lb	6 058 kg	13,356 lb
Zinc.....	1 055 151 kg	2,326,209 lb	1 039 688 kg	2,292,118 lb
Non-metallics				
Asbestos.....	1 056 t	1,164 tons	1 549 t	1,707 tons
Barite.....	..	..	..	..
Feldspar.....	-	-	-	-
Fluorspar.....	-	-	..	..
Gemstones.....	110 kg	243 lb	..	..
Gypsum.....	5 719 t	6,305 tons	5 663 t	6,240 tons
Magnesitic dolomite and brucite.....	..	..	..	..
Nepheline syenite.....	468 t	516 tons	541 t	596 tons
Nitrogen.....	..	..	..	..
Peat.....	361 t	398 tons	363 t	399 tons
Potash (K ₂ O).....	4 673 t	5,152 tons	5 126 t	5,650 tons
Pyrite, pyrrhotite.....	21 t	23 tons	31 t	34 tons
Quartz.....	2 492 t	2,747 tons	2 376 t	2,619 tons
Salt.....	5 123 t	5,647 tons	5 752 t	6,338 tons
Soapstone, talc, pyrophyllite.....	66 t	73 tons	65 t	71 tons
Sodium sulphate.....	472 t	521 tons	490 t	540 tons
Sulphur in smelter gas	695 t	766 tons	781 t	859 tons
Sulphur, elemental....	4 079 t	4,496 tons	3 781 t	4,166 tons
Titanium dioxide, etc..	..	..	..	..
Mineral fuels				
Coal.....	25 259 t	27,843 tons	25 311 t	27,900 tons
Natural gas.....	87 485 758 m ³	3,089,530 Mcf	86 858 171 m ³	3,067,367 Mcf
Natural gas by-products.....	17 835 m ³	112,177 bbl	16 543 m ³	104,053 bbl
Petroleum, crude.....	82 802 m ³	520,810 bbl	77 843 m ³	489,610 bbl

Table 9. Mineral production, by kind, 1975 and 1976 (concluded)

Mineral	1975		1976 ¹	
	'000	'000	'000	'000
Structural materials				
Clay products (bricks, tile, etc.) . . . . .	..	..	..	..
Cement	9 965 t	10,985 tons	9 850 t	10,858 tons
Lime	1 601 t	1,765 tons	1 825 t	2,012 tons
Sand and gravel	247 155 t	272,442 tons	247 660 t	273,000 tons
Stone	88 921 t	98,018 tons	87 180 t	96,100 tons

¹ Preliminary estimates.
.. Not available.
- Nil or zero.

An open-pit copper mine, Highland Valley, BC.



Petroleum and Natural Gas

The petroleum industry is Canada's leading mineral producer; it extracted about \$7,993.4 million worth of hydro-carbon products in 1976, an increase of 27.3 per cent over 1975. Crude oil, Canada's most important mineral, contributed \$4,128.5 million (77 843 000 m³) to this total. Production of natural gas, now Canada's second leading mineral, accounted for \$2,466.6 million (86 858 171 000 m³) and pentanes, propane and butanes for \$794.3 million (16 543 000 m³). In addition, elemental sulphur is a very valuable by-product of gas-processing plants.

Alberta accounted for 84 per cent of all production, Saskatchewan for 3 per cent, British Columbia for 11 per cent and all the other provinces for 1 per cent.

Due to increases in the cost of natural gas, the value of exports in 1976 increased dramatically. Natural gas exports amounted to 27 015 710 000 m³, an increase of 0.5 per cent from 1975, but their value was \$1,616.5 million, an increase of 48.0 per cent. Crude oil exports of 29 044 070 m³ in 1976, down 30.4 per cent from 1975, had a value of \$2,286.7 million, a decrease of 25.1 per cent from the \$3,051.5 million in 1975. Imports of crude oil amounted to 43 951 342 m³.

To help redress a situation in which western Canadian crude oil was being exported at relatively low prices while eastern Canada had to rely on expensive foreign crude oil, the federal government applied an export tax. The proceeds from this tax subsidize eastern Canadian consumers.

Total sales of refined petroleum products were 96 420 192 m³ in 1976, including 35 443 979 m³ of motor gasoline, 31 009 359 m³ of middle distillates, 16 736 205 m³ of heavy fuel oils and 13 230 649 m³ of lubricating oils and grease, asphalt and other products.

The need to move oil and natural gas to many parts of the continent has led to the development of large pipeline systems as a major form of transportation. In 1976 the transportation of crude oil and its equivalent, liquefied petroleum gases, and of refined petroleum products amounted to 108.7 million pipeline cubic metre kilometres, down 6.4 per cent from 1975; that of natural gas amounted to 90 181 000 million pipeline cubic metre kilometres, an increase of 0.5 per cent.

In 1975 the total operating and capital expenditures of the petroleum industry amounted to \$4,191.0 million. The industry has made great efforts to find new reserves and increase its production of hydro-carbon products since 1961, when its investment was only \$716.2 million. In 1975 geological and geophysical work accounted for \$225.8 million of the total; \$256.5 million was spent on acquiring land or leases; \$649.5 million was spent on exploratory and development drilling; \$484.5 million was spent on capital additions; \$596.4 million was spent on field, well and natural gas plant operations; and \$1,978.4 million was spent on royalties, taxes and other miscellaneous expenditures. Seventy-seven per cent of all expenditure, amounting to \$3,209.0 million, was in Alberta; 9 per cent was in the Northwest Territories, the Yukon Territory and the Arctic islands, 4 per cent was in British Columbia and 8 per cent was in Saskatchewan.

The energy crisis of 1973 brought about a much greater awareness that the use of energy, particularly oil and gas, was growing faster than the rate at which new resources were being found. Canada is fortunate in that it is one of the few countries in the world that is self-sufficient in energy. Canada has proven reserves of



Workmen upgrading gas pipelines in Chatham, Ont.

conventional crude oil to last approximately 12 years and enough natural gas to last 25 years at current rates of consumption. However, the long-term oil and natural gas supply depends on harnessing the vast reserves of "synthetic" crude oil in the Athabasca tar sands and finding more reserves in the frontier areas of Canada. Great Canadian Oil Sands Limited has the only plant now operating in the tar sands area, but several other consortiums are planning similar operations. The Athabasca tar sands contain an estimated 47 734 000 000 m³ of synthetic crude oil recoverable by mining or thermal processes, although only some 955 000 000 m³ are recoverable using present technology. Along with this development is the increasing emphasis being placed on exploratory work in the Arctic and offshore areas and on studies on the optimum method of transporting any energy form that may be found.

Coal

Production of coal in Canada increased marginally from 25 259 000 t in 1975 to 25 311 000 t in 1976. A long strike in the British Columbia mines accounted for a large decrease in that province and, consequently, for the small increase for the whole country. Excluding subvention payments, the preliminary value of coal production in 1976 increased to \$604 million from \$586 million in 1975. Japanese steel producers, Canada's main export customers, accounted for approximately 95 per cent of all coal exports.

Table 10. Production of coal, by province, 1975 and 1976

Province	Type of coal	1975		1976 ¹	
		Metric tonnes '000	Short tons '000	Metric tonnes '000	Short tons '000
Nova Scotia.....	Bituminous	1 657	1,826	1 996	2,200
New Brunswick....	Bituminous	418	461	290	320
Saskatchewan.....	Lignite	3 549	3,912	4 627	5,100
Alberta.....	Sub-bituminous	5 958	6,568	6 223	6,860
	Bituminous	4 097	4,516	4 464	4,920
	Total Alberta	10 055	11,084	10 687	11,780
British Columbia ...	Bituminous	9 580	10,560	7 711	8,500
Total.....		25 259	27,843	25 311	27,900

¹ Preliminary estimates.

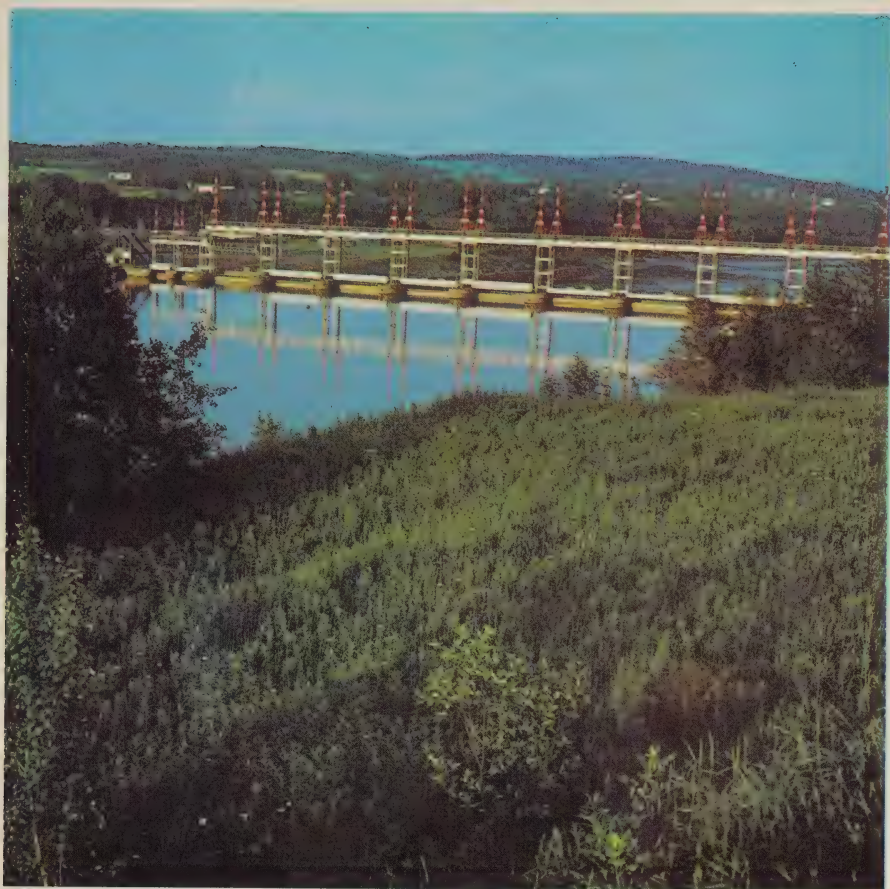
Electricity

Canada's electric power development has grown steadily since the beginning of this century. The country's total generating capacity has increased from a modest 133 MW (megawatts) in 1900 to approximately 61 354 MW by the end of 1975.

Although water power traditionally has been the main source of electrical energy in Canada, and still is, thermal sources are becoming more important and this trend is expected to continue. The choice between the development of a hydro-electric power site and the construction of a thermal generating station must take into account a number of complex considerations, the most important of which are economic. The heavy capital costs involved in constructing a hydro-electric project are offset by maintenance and operating costs considerably lower than those for a thermal plant. The long life of a hydro plant and its dependability and flexibility in meeting varying loads are added advantages. Also important is the fact that water is a renewable resource. The thermal station, on the other hand, can be located close to areas where power is needed, with a consequent saving in transmission costs; however, pollution problems at these plants are an undesirable factor.

The marked trend toward the development of thermal stations that became apparent in the 1950s can be explained to some extent by the fact that, in many parts of Canada, most of the hydro-electric sites within economic transmission distance of load centres have been developed and planners have had to turn to other sources of electrical energy. Although recent advances in extra-high voltage transmission techniques have given impetus to the development of hydro-electric sites previously considered too remote, thermal stations will probably be the more important of the two sources in the long run.

Water Power Resources and Developments. Substantial amounts of water power have been developed in all provinces except Prince Edward Island, where there are no large streams. The resources of Newfoundland are estimated to be considerable; topography and run-off favour hydro-electric power development. In



The Mactaquac Dam for hydro-electric power generation in New Brunswick.

fact, the hydro-electric plant at Churchill Falls in Labrador, with its 5 225 MW capacity, is the largest single generating plant of any type in the world. The water power of Nova Scotia and New Brunswick, small in comparison with that of other provinces, is none the less a valuable source of energy; their numerous moderate-sized rivers provide power for the cities and for the development of the provinces' timber and mineral resources.

Quebec is richest in water power resources, with over 40 per cent of the total for Canada, and has the most developed capacity. Even this considerable figure could double if plans for the development of a number of rivers flowing into James Bay become a reality; this development could result ultimately in an additional 10 000 MW. Another significant development is Hydro-Québec's Manicouagan-Outardes project, which when completed will produce 5 517 MW on the two rivers; already some 4 077 MW are installed. At the moment, the largest single hydro-electric installation in Quebec is Hydro-Québec's 1 574 MW Beauharnois development on the St. Lawrence River.

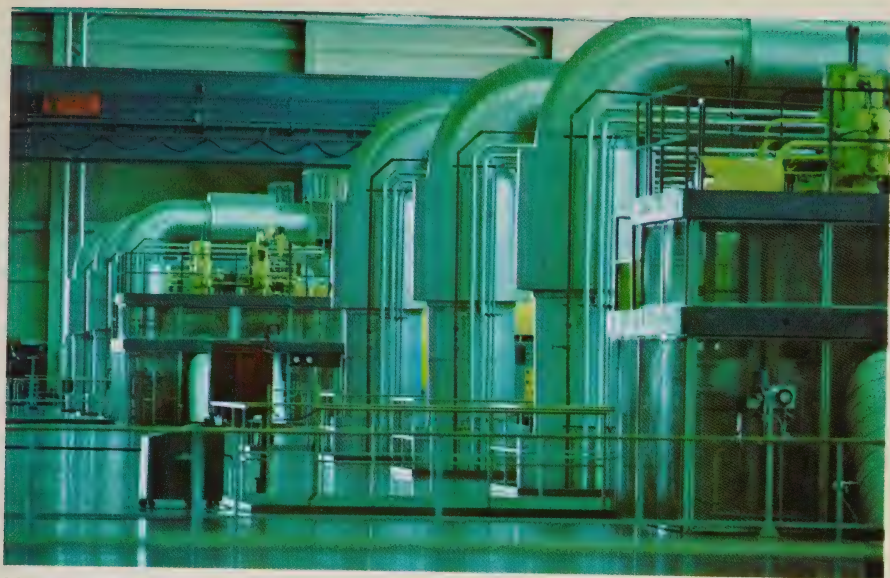
In Ontario, almost all of the sizable water power potential within easy reach of demand centres has been developed and planners are looking to more remote sites. Most of the hydro-electric power produced in the province comes from Ontario Hydro, the largest public utility in Canada. Its chief stations are on the Niagara River at Queenston and have a total generating capacity of 1 804 MW.

Manitoba is the most generously endowed of the Prairie provinces, with immense potential on the Winnipeg, Churchill, Nelson and Saskatchewan rivers. In Alberta most of the developments are located on the Bow River and its tributaries. British Columbia ranks second in terms of potential water power resources and is third in installed generating capacity; current development of the Peace and Columbia rivers will provide immense power resources in the future. In the Yukon Territory and the Northwest Territories water power is of special importance in the development of mining areas such as Mayo and Yellowknife. In the Yukon Territory most resources are on the Yukon River and its tributaries. In the Northwest Territories the rivers flowing into Great Slave Lake and the South Nahanni River, which drains into the Mackenzie River, have considerable potential, although they have not yet been thoroughly surveyed.

Conventional Thermal Power. Some 90 per cent of all conventional thermal power generating equipment in Canada is driven by steam turbines and the remainder of the load is carried by gas turbine and internal combustion equipment. Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Saskatchewan, Alberta and the Northwest Territories depend on thermal stations for most of their power requirements. Quebec's wealth of water power has so far limited the application of thermal power in that province to local use and the James Bay project should maintain hydro pre-eminence. Manitoba and British Columbia both have substantial amounts of thermal capacity, but current development is still of hydro-electricity.

A crew repairing power transmission lines near Calgary, Alta.





The turbine hall of the Pickering Nuclear Power Station in Ontario.

Nuclear Thermal Power. Development of commercial electric power generation in thermal plants using the heat generated by nuclear reactors is one of Canada's major contributions to energy resource technology. This development has centred around the CANDU reactor, which uses a natural uranium fuel with a heavy water moderator; heavy water as a moderator provides a high-energy yield and facilitates the handling of spent fuel. The first experimental reactor went into use in 1962 at Rolphton, Ont., with a capacity of 20 MW. Since then, four major nuclear projects have been undertaken. The first full-scale nuclear plant is situated at Douglas Point on Lake Huron; it consists of a single unit, completed in 1967, with a capacity of 220 MW. The second project is a four-unit 2 160 MW capacity plant built at Pickering, east of Toronto; its four units came on line from 1971 to 1973. Both the Douglas Point and the Pickering plants use heavy water as a coolant. The third nuclear plant is a 250 MW unit situated at Gentilly, Que.; it uses boiling light water as a coolant. The fourth plant is the 3 200 MW Bruce Station in Ontario, scheduled for completion by 1978. The utilization of present nuclear plants has been hindered by a shortage of heavy water, but recently instituted programs to increase production should alleviate this shortage in the near future.

Power Generation and Utilization. In 1976 Canada's generating facilities produced 293 411 232 MWh (megawatt hours) of electric energy, 73 per cent in hydro-electric stations. Energy exported to the US exceeded by 9 287 851 MWh the energy imported, bringing the total available to Canadian users to 284 123 381 MWh. Average domestic and farm consumption continues to rise year by year. In 1974 it was 8 701 kWh (kilowatt hours), ranging from a low of 5 475 kWh in Prince Edward Island to a high of 10 772 kWh in Manitoba. The average annual bill for domestic and farm customers was \$153.39.

Employment

The Labour Force

In 1976 the Canadian labour force averaged 10,308,000 persons, or 61.1 per cent of the total population 15 years of age and over (excluding inmates of institutions, full-time members of the Canadian Armed Forces, residents of the Yukon Territory and the Northwest Territories and residents of Indian reserves); it was composed of 9,572,000 employed and 736,000 unemployed persons. Table 1 shows the growth in this labour force during the 1970-76 period. From 1970 to 1975 this growth was generated by increases in both the size of the population aged 15 and over and the participation rate, but in 1976 the overall participation rate levelled off, leaving population growth as the primary source of increases in the labour force. The stationary participation rate between 1975 and 1976 represented the net effect of declines in the rate for men of all ages balancing out the increases for women 25 years of age and over. The participation rate of women aged 15 to 24 remained unchanged.

Table 2 shows an employment increase of 209,000 between 1975 and 1976, with women accounting for 65.6 per cent of this growth and men making up the balance of 34.4 per cent. This represents an increase in the women's share of employment growth, since over the 1970-75 period they made up 54.2 per cent of the average annual increase. Between 1975 and 1976 persons aged 15 to 24 years accounted for 19,000 or 9.1 per cent of total employment growth, which is in marked contrast with their 31.3 per cent share over the 1970-75 period. The growth from 1975 to 1976 for those aged 25 years and over was 191,000, or 91.4 per cent, compared to 68.6 per cent over the earlier period.

Table 1. Labour force characteristics, annual averages, 1970 to 1976

Year	Population ¹ '000	Labour force '000	Employed '000	Unemployed '000	Participation rate %	Unemployment rate %
1970	14,528	8,396	7,919	476	57.8	5.7
1971	14,878	8,643	8,107	536	58.1	6.2
1972	15,227	8,918	8,363	555	58.6	6.2
1973	15,608	9,321	8,802	519	59.7	5.6
1974	16,039	9,704	9,185	519	60.5	5.3
1975	16,470	10,060	9,363	697	61.1	6.9
1976	16,873	10,308	9,572	736	61.1	7.1

¹ Persons 15 years of age and over, excluding inmates of institutions, full-time members of the Canadian Armed Forces, residents of the Yukon Territory and the Northwest Territories and residents of Indian reserves.

Table 2. Employment by age and sex, annual averages, 1970-76
(thousands)

Age and sex	1970	1971	1972	1973	1974	1975	1976
Total employed	7,919	8,107	8,363	8,802	9,185	9,363	9,572
Men	5,260	5,332	5,476	5,711	5,919	5,966	6,038
Women	2,660	2,775	2,887	3,091	3,266	3,397	3,534
Employed aged 15-24	1,916	1,984	2,078	2,250	2,401	2,410	2,429
Men	1,057	1,084	1,142	1,243	1,330	1,325	1,328
Women	860	899	936	1,006	1,071	1,086	1,102
Employed aged 25+	6,003	6,123	6,285	6,552	6,784	6,952	7,143
Men	4,203	4,247	4,334	4,467	4,588	4,641	4,711
Women	1,800	1,876	1,951	2,085	2,195	2,311	2,432

Table 3 shows the distribution of unemployment by principal age and sex groups for 1970 and 1976 and the shift in the proportions of total unemployment from adult men to women and persons aged 15 to 24 years. Specifically, men aged 25 years and over represented 37.4 per cent of the unemployed in 1970 but only 28.3 per cent in 1976, while women in the same age group increased from 17.6 per cent to 23.5 per cent and persons aged 15 to 24 years moved from 45.2 per cent to 48.2 per cent. Table 3 also shows that the range in provincial unemployment rates increased between 1970 and 1976.

Table 3. Unemployment by age and sex and by province, annual averages, 1970 and 1976

Age and sex	No. unemployed		Province	Unemployment rate	
	1970 '000	1976 '000		1970 %	1976 %
Total unemployed	476	736	Nfld.	7.2	13.6
Men	312	411	PEI	-	9.8
Women	165	325	NS	5.5	9.6
Unemployed aged 15-24	215	355	NB	6.3	11.1
Men	134	204	Que.	7.0	8.7
Women	81	152	Ont.	4.4	6.2
Unemployed aged 25+ .	262	381	Man.	5.4	4.7
Men	178	208	Sask.	4.3	4.0
Women	84	173	Alta.	5.1	3.9
			BC	7.7	8.6

- Based on too small a sample for publication.

Earnings and Hours of Work

Statistics Canada obtains information on average weekly earnings, average weekly hours and average hourly earnings from its monthly survey of Employment, Payrolls and Manhours. The survey covers larger companies that have 20 or more employees in any month of the year; these companies account for almost 75 per cent of the total commercial non-agricultural employment in Canada.

Average Weekly Earnings. Average weekly earnings of all employees in all of the industries surveyed were \$228.08 in 1976; this was a 12.2 per cent rise from the 1975 level. The industrial gains ranged from 10.7 per cent in finance, insurance and real estate to 15.4 per cent in forestry. Among the provinces, gains ranging from 11.1 per cent in New Brunswick to 14.2 per cent in Saskatchewan and Alberta were recorded.

Table 4. Average weekly earnings for all employees, selected industries and industrial composite¹, annual averages, 1961, 1975 and 1976

Industry and province	Average weekly earnings (dollars)			Percentage increase	
	1961	1975 ²	1976 ²	1961 to 1976 ²	1975 ² to 1976 ²
Industry					
Forestry.....	79.02	249.58	288.09	264.6	15.4
Mining, incl. milling.....	95.57	280.44	317.15	231.9	13.1
Manufacturing.....	81.55	213.43	241.35	196.0	13.1
Durables.....	88.22	227.11	257.61	192.0	13.4
Non-durables.....	76.17	199.98	225.76	196.4	12.9
Construction.....	86.93	290.95	331.07	280.9	13.8
Transportation, communications and other utilities.....	82.47	233.98	261.81	217.5	11.9
Trade.....	64.54	159.06	176.70	173.8	11.1
Finance, insurance and real estate.....	72.82	193.12	213.70	193.5	10.7
Service.....	57.87	143.68	160.50	177.4	11.7
Industrial composite ¹	78.24	203.34	228.08	191.5	12.2
Industrial composite by province					
Newfoundland.....	71.06	196.44	221.72	212.0	12.9
Prince Edward Island.....	54.91	149.84	170.86	211.2	14.0
Nova Scotia.....	63.72	172.40	193.27	203.3	12.1
New Brunswick.....	63.62	182.40	202.60	218.5	11.1
Quebec.....	75.67	199.22	222.43	194.0	11.7
Ontario.....	81.30	204.85	228.79	181.4	11.7
Manitoba.....	73.66	186.10	208.50	183.1	12.0
Saskatchewan.....	74.38	188.31	214.96	189.0	14.2
Alberta.....	80.29	207.38	236.84	195.0	14.2
British Columbia.....	84.99	229.97	259.65	205.5	12.9

¹ "Industrial composite" is the sum of all industries except agriculture, fishing and trapping, education and related services, health and welfare services, religious organizations, private households, and public administration and defence. All statistics are based on returns received from employers having 20 or more employees in any month of the year.

² Data for 1975 and 1976 are preliminary.



Fire-fighting in Vancouver, BC.

Average Hourly Earnings.¹ In 1976 average hourly earnings rose 13.7 per cent in mining, 13.8 per cent in manufacturing and 15.1 per cent in construction. By province, average hourly earnings in manufacturing registered gains ranging from 10.9 per cent in Nova Scotia to 15.2 per cent in Newfoundland.

Average Weekly Hours.¹ From 1975 to 1976 average weekly hours increased by 0.8 per cent in mining and 0.3 per cent in manufacturing, while they dropped 0.5 per cent in construction. Average weekly hours in manufacturing declined in all provinces except New Brunswick, Ontario and British Columbia; the changes ranged from -1.9 per cent in Newfoundland to 1.1 per cent in New Brunswick and British Columbia.

¹Data on average hourly earnings and average weekly hours pertain only to those wage-earners from whom data on hours were available.

Table 5. Average hourly earnings and average weekly hours for hourly-rated wage earners, annual averages, 1961, 1975 and 1976

Industry and province	Average hourly earnings (AHE)			Average weekly hours (AWH)			Increases in AHE		Changes in AWH	
							1961 to 1976 ¹	1975 ¹ to 1976 ¹	1961 to 1976 ¹	1975 ¹ to 1976 ¹
	1961 \$	1975 ¹ \$	1976 ¹ \$	1961 No.	1975 ¹ No.	1976 ¹ No.	%	%	%	%
Industry										
Mining, incl. milling	2.13	6.51	7.40	41.8	40.0	40.3	247.4	13.7	-3.6	+0.8
Manufacturing	1.83	5.06	5.76	40.6	38.6	38.7	214.8	13.8	-4.7	+0.3
Durables	2.00	5.41	6.13	40.9	39.1	39.5	206.5	13.3	-3.4	+1.0
Non-durables	1.69	4.68	5.36	40.3	38.0	37.9	217.2	14.5	-6.0	-0.3
Construction	2.06	7.53	8.67	40.9	39.1	38.9	320.9	15.1	-4.9	-0.5
Building	2.16	7.68	8.73	38.9	37.4	37.4	304.2	13.7	-3.9	-
Engineering	1.90	7.26	8.59	44.8	42.0	41.6	352.1	18.3	-7.1	-1.0
Manufacturing by province²										
Newfoundland	1.69	4.81	5.54	40.5	37.8	37.1	227.8	15.2	-8.4	-1.9
Nova Scotia	1.58	4.57	5.07	40.3	38.5	37.9	220.9	10.9	-6.0	-1.6
New Brunswick	1.55	4.65	5.28	40.9	38.2	38.6	240.7	13.6	-5.6	+1.1
Quebec	1.65	4.56	5.17	41.5	39.1	38.9	213.3	13.4	-6.3	-0.5
Ontario	1.94	5.18	5.87	40.5	38.9	39.3	202.6	13.3	-3.0	+1.0
Manitoba	1.67	4.62	5.17	39.7	37.3	37.2	209.6	11.9	-6.3	-0.3
Saskatchewan	1.98	5.39	6.14	39.0	37.0	36.9	210.1	13.9	-5.4	-0.3
Alberta	1.96	5.53	6.25	39.7	37.4	37.5	218.9	13.0	-5.5	+0.3
British Columbia	2.23	6.55	7.54	37.7	36.1	36.5	238.1	15.1	-3.2	+1.1

¹ Data for 1975 and 1976 are preliminary.

² Data for Prince Edward Island are not available.

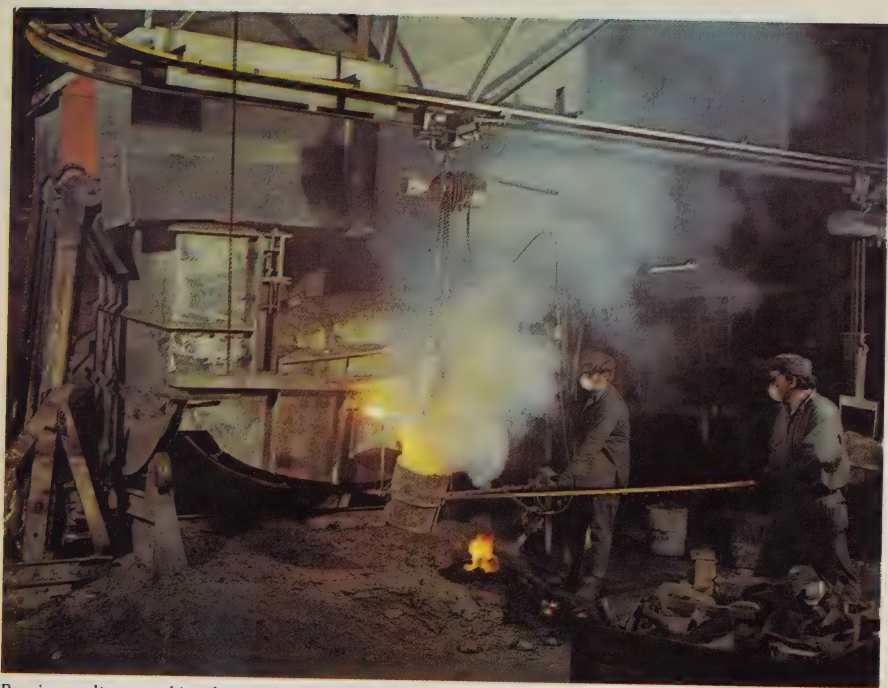
- Nil or zero.

Labour Organizations

Membership in labour organizations active in Canada totalled 2,875,464 in 1975. About 71.1 per cent of the members were in unions affiliated with the Canadian Labour Congress (CLC); 6.0 per cent were affiliates of the Confederation of National Trade Unions (CNTU); 1.4 per cent were affiliated with the Centrale des syndicats démocratiques (CSD); 0.7 per cent were affiliates of the Confederation of Canadian Unions (CCU); the remaining 20.8 per cent were members of unaffiliated national and international unions and independent local organizations.

Of the total union members, 51.4 per cent belonged to international unions, chiefly AFL-CIO/CLC unions. National unions accounted for 48.6 per cent of union membership in Canada.

Twenty-three unions reported memberships of 30,000 or more in 1975. The five largest unions were the Canadian Union of Public Employees (198,900); the United Steelworkers of America (187,000); the Public Service Alliance of Canada (136,000); the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (117,500); and the United Brotherhood of Carpenters and Joiners of America (89,000).



Pouring molten metal in a bronze factory in Winnipeg, Man.

Unemployment Insurance

The Unemployment Insurance Act was passed in 1940. Since that time the basic structure of the Act has remained unaltered, although various amendments have brought new categories of workers into the plan and contributions and benefit rates have been raised periodically to keep abreast of changing economic conditions.

In 1968, when Parliament approved upward revisions of both contributions and benefit rates and broadened the scope of coverage, the Unemployment Insurance Commission was instructed to carry out a full-scale investigation of the program and recommend appropriate changes in approach and structure. The Unemployment Insurance Act of 1971 was the result of extensive studies. Its basic objectives are (1) to provide assistance in coping with an interruption of earnings resulting from unemployment, including unemployment due to illness, and (2) to co-operate with other agencies engaged in social development.

During 1976 benefit payments under the Act amounted to \$3,342 million.

Under the Unemployment Insurance Act of 1971 coverage was extended, effective January 1972, to all regular members of the labour force for whom there exists an employer-employee relationship. The only non-insurable employment is that which is remunerated at less than 20 per cent of the maximum weekly insurable earnings or 20 times the provincial hourly minimum wage, whichever is the lesser. Coverage, contributions and benefit entitlement cease at age 65. The number of insured persons was estimated at 9.2 million in December 1976.



Potato processing, PEI.

Employers and employees pay for the cost of initial benefits and administration; the employer's rate is 1.4 times the employee's rate. In 1977 the maximum weekly contribution by an employee was \$3.30. The government's share is confined to the cost of extended benefits and the extra cost of initial benefits due to a national unemployment rate greater than the most recent eight-year average. There is no fund, and employer and employee contributions are adjusted yearly. The Taxation Branch of Revenue Canada started to collect contributions at the beginning of 1972.

The duration of benefit under the new program is not determined solely by the length of time a person has worked. A claimant can draw to a maximum of 51 weeks, depending on his or her employment history and the prevailing economic conditions, provided that (1) he or she has had at least eight weeks of contributions in the last 52 and (2) he or she has been available, capable of and searching for work. Persons with 20 or more weeks of insured earnings (called a "major labour force attachment") are eligible for a wider range of benefits that includes payments when the interruption of earnings is caused by illness or pregnancy and three weeks' retirement benefit for older workers. A claimant is not entitled to be paid benefit



Custom shoe manufacturing in Vancouver, BC.

until he or she has served a two-week waiting period that begins with a week of unemployment for which benefits would otherwise be payable.

Sickness benefits are available up to a maximum of 15 weeks for persons with a major labour force attachment who have suffered an interruption of earnings due to illness, injury or quarantine (excluding cases covered by Workmen's Compensation). Maternity benefits are available for a maximum of 15 weeks to women who have had a major labour force attachment; they must also have been part of the labour force at least 10 of the 20 weeks prior to the 30th week before the expected date of confinement.

Retirement benefit is available for three weeks. It is paid in a lump sum to major attachment claimants who are 65 years of age. In the case of those over 65 the application must be made within 32 weeks of the 65th birthday, as employment weeks are no longer earned after that time. The benefit is paid without a waiting period and without regard to earnings or availability.

The benefit rate for all claims is two thirds of a person's average insured earnings in the qualifying period, to a maximum in 1977 of \$147 a week and with a minimum of \$20 a week. The maximum insurable earnings and the maximum benefit are subject to annual adjustment based on an index calculated from earnings of Canadian employees. In 1977 maximum weekly insurable earnings were \$220.

Income from employment in excess of 25 per cent of the benefit rate is deducted from the benefits payable. In the case of sickness or maternity, proceeds of wage-loss plans are not deducted from unemployment benefits during the waiting period but are deducted afterwards. All work-related income is deducted both during the waiting period and after the waiting period has been served.

Industry

Industrial Growth and Change

In Canada the long expansionary phase of domestic output that was such a remarkable characteristic of the 1960s faltered in the early 1970s and ended in 1974. From 1974 to 1975 there was virtually no growth in output. In the second half of 1975 a modest recovery started, and it continued into 1976. However, from mid-1976 on, the recovery seemed to be losing impetus, leaving an unclear outlook for 1977.

The 1961-1971 Period

The expansion of the 1960s was evident throughout most of the major divisions of the economy. While real domestic product grew by 75.4 per cent between 1961 and 1971, the resource-based industries (excluding mines), construction, retail trade, local government and federal government failed to equal this rate of growth. The 83.1 per cent growth of mines, quarries and oil wells from 1961 to 1971 reflected strong increases over the decade in iron mines, crude petroleum and natural gas. Gains in the manufacturing industries brought the aggregate growth for manufacturing to 83.3 per cent above 1961, the largest gains being recorded in the transportation equipment industries (particularly motor vehicle manufacturers), chemical industries, metal fabricating industries and machinery industries. A wide range of service industries recorded 1961-71 output growth rates that exceeded the aggregate for real domestic product. Air transport and rail transport, at 253.2 per cent

A natural gas station supplying Edmonton, Alta.

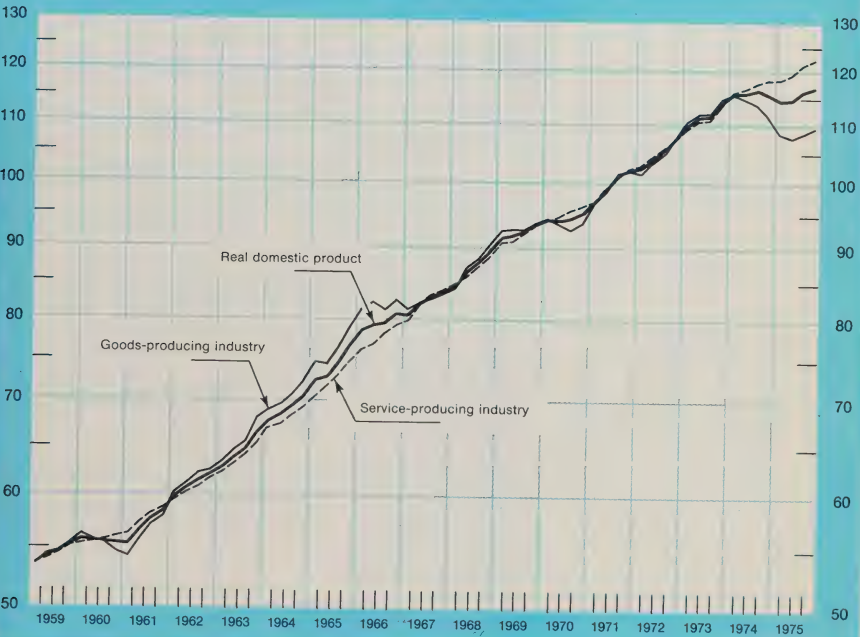


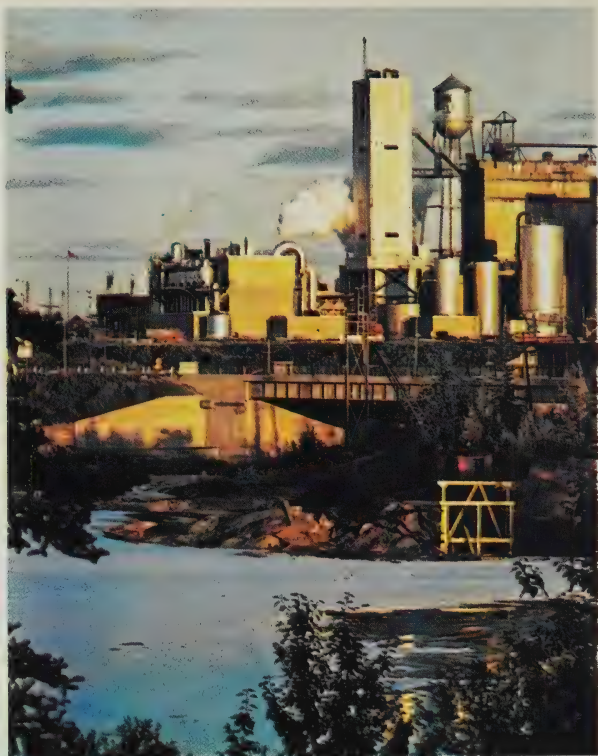
and 82.9 per cent respectively, and education, at 132.5 per cent, were service industries showing the largest rates of growth. Two large aggregations of industries—community business and personal services, and finance, insurance and real estate, which together contribute over one quarter of domestic output—showed 1961-71 growth rates of 87.6 per cent and 76.9 per cent respectively.

Industrial growth and change from 1961 to 1971 should be viewed as part of a pattern of overall change in the domestic economy. Some of the changes are very long-term and enduring; others are short-term and temporary.

Probably the most fundamental change, one that Canada has in common with many developed economies, is the transition from a predominantly goods-producing economy to a predominantly services-producing economy. This particular process of change started before there were statistics to measure it. In 1949, for example, 53 per cent of domestic production occurred in the goods-producing industries; in 1971 it was 40 per cent.

Real domestic product, by quarters, 1971=100
(adjusted for seasonal variation)





Paper mill, Kapuskasing, Ont.

Much of the change occurred as the resource-based industries, particularly agriculture, declined in their relative contributions to total domestic output. The relative contribution of resource-based industries—agriculture, forestry, fishing, trapping, mines, quarries and oil wells—approximately halved, from 16.6 per cent of total output in 1949 to 8.1 per cent in 1971. Manufacturing also declined in relative importance in the same period, from 28 per cent to 23 per cent of total domestic output. Within manufacturing, the relative contribution of the non-durable goods producing industries showed considerable decline, whereas the durable goods producing industries showed an increase that in part reflected increases in the contributions of motor vehicle parts and accessories manufacturers and electrical products manufacturers.

The relative growth of education and related services industries produced the most dramatic of the shifts in industrial structure. These more than quadrupled their contributions to total domestic output, from 1.6 per cent in 1949 to 6.5 per cent in 1971, which reflected the increase in post-secondary school education in particular.

Another large change was in the health and welfare services industries, which grew from a 2.3 per cent share of total domestic output in 1949 to one of 5.3 per cent in 1971. The large aggregation of industries identified as the finance, insurance and

real estate industries increased their share of output from 9.1 per cent in 1949 to 12.0 per cent in 1971 and growth in computer-related services also added to service-industry growth.

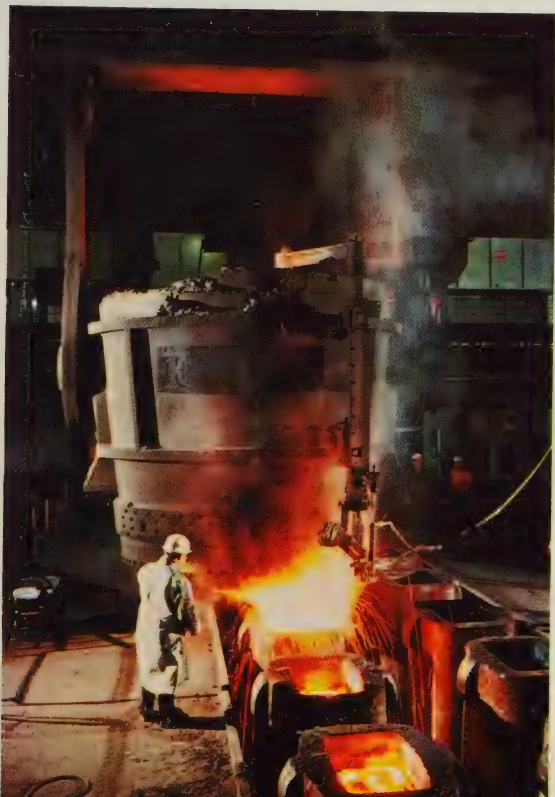
The 1971-1976 Period

This period was ushered in in 1971 with a record level of output for agriculture and very high levels of output in the transportation equipment industries, especially in motor vehicle manufacturers. However, agriculture declined substantially in 1972 and failed to rally much in 1973, a year in which most divisions of the economy were achieving high levels of output.

The marked slowdown in activity that began in 1974, while reflecting a slowing of the growth of the services-producing industries, was mainly the result of sharp declines in the goods-producing industries. For the one-year period from the first quarter of 1974 to the first quarter of 1975 services-producing industries slowed from the 1971-1974 average growth rate of 5.9 per cent to 2.5 per cent; goods-producing industries reversed from the 1971-1974 growth rate of 4.9 per cent to a decline in that one-year period of 5.3 per cent.

There was little clear indication of recovery until the last quarter of 1975; then a strong resurgence in the goods-producing industries fuelled the recovery until May

Steel mill, Hamilton, Ont.



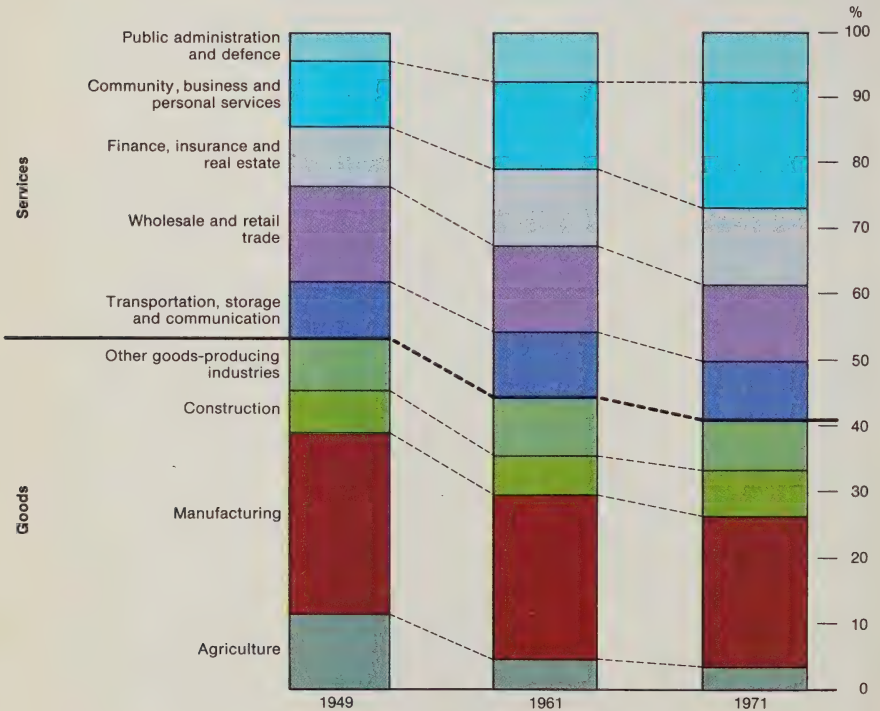
1976. The change from October 1975 to May 1976 for the goods-producing industries, services-producing industries and total domestic product were 8.7 per cent, 2.6 per cent and 4.9 per cent respectively.

The slower rate of growth in output from May 1976 to the end of the year was most clearly due to a decline in non-residential construction, although there were a number of other industries that also declined during this period and thus contributed to the slower growth rate, including pulp and paper, smelting and refining, residential construction, and the several transportation equipment industries.

On the other hand, the services-producing industries showed generally strong growth in this period. Retail trade, the industries in the finance, insurance and real estate group and those in the community, business and personal services group, all of which contribute nearly 40 per cent of aggregate domestic output, showed strong growth between May and December 1976.

For 1977 the outlook for a resumption of strong industrial growth was thus clouded by the appearance of weakness in some of the goods-producing industries.

Changes in the industrial structure of the Canadian economy





New process units under construction at an oil refinery in Mississauga, Ont.

Capital Expenditures

A sustained rising income in Canada depends upon, among other things, the capacity to produce and sell goods and services. This capacity and its efficiency in turn depend largely on the amount invested in new mines, factories, stores, power generating installations, communications and transportation equipment, hospitals, schools, roads, parks and all other forms of capital expenditure that encourage the production of goods and services in future periods.

Surveys of these capital expenditures are made at regular intervals every year. On each occasion statistics are published for expenditures on housing, non-residential construction, and machinery and equipment by all sectors of the Canadian economy. Approximately 24,000 establishments are surveyed for their investment intentions. In order to approximate full coverage, adjustments are made for non-surveyed and for non-reporting firms. In a few areas, expenditure estimates are arrived at independently on the basis of current trends and expert opinion in these fields (e.g. agriculture, fishing and housing).

Information on capital spending intentions provides a useful indication of market conditions both in the economy at large and in particular industries. Since such

Table 1. Summary of capital and repair expenditures, by sectors, 1975¹ and 1976²
(million dollars)

Sector		Capital expenditures			Capital and repair expenditures		
		Construc- tion	Machinery and equipment	Sub- total	Construc- tion	Machinery and equipment	Total
Agriculture.....	1975	519.2	1,998.1	2,517.3	724.0	2,382.4	3,106.4
	1976	579.9	2,421.1	3,001.0	797.2	2,851.7	3,648.9
Forestry.....	1975	88.9	97.6	186.5	120.8	203.8	324.6
	1976	97.0	89.2	186.2	136.2	212.0	348.2
Mining, quarrying and oil wells.....	1975	2,000.2	622.0	2,622.2	2,235.6	1,262.7	3,498.3
	1976	2,821.9	751.5	3,573.4	3,106.9	1,459.2	4,566.1
Construction industry..	1975	75.2	457.2	532.4	93.3	860.1	953.4
	1976	82.9	504.0	586.9	102.8	948.3	1,051.1
Manufacturing.....	1975	1,536.9	3,888.1	5,425.0	1,883.7	5,833.8	7,717.5
	1976	1,622.4	4,144.6	5,767.0	2,005.2	6,308.9	8,314.1
Utilities.....	1975	4,146.6	3,771.1	7,917.7	4,817.3	5,248.6	10,065.9
	1976	4,838.1	3,870.7	8,708.8	5,577.2	5,499.6	11,076.8
Trade.....	1975	335.7	607.7	943.4	421.5	722.3	1,143.8
	1976	338.4	725.0	1,063.4	428.2	843.7	1,271.9
Finance, insurance and real estate.....	1975	1,475.4	187.3	1,662.7	1,567.8	221.4	1,789.2
	1976	1,501.0	219.2	1,720.2	1,594.4	255.1	1,849.5
Commercial services..	1975	846.6	1,547.6	2,394.2	880.5	1,727.5	2,608.0
	1976	583.7	1,666.9	2,250.6	617.4	1,874.9	2,492.3
Institutions.....	1975	1,163.4	280.1	1,443.5	1,327.3	333.4	1,660.7
	1976	1,195.1	297.7	1,492.8	1,365.0	352.3	1,717.3
Government departments.....	1975	4,621.5	646.0	5,267.5	5,341.5	818.0	6,159.5
	1976	4,752.1	719.6	5,471.7	5,509.2	908.2	6,417.4
Housing.....	1975	7,084.7	-	7,084.7	8,718.4	-	8,718.4
	1976	8,777.2	-	8,777.2	10,588.7	-	10,588.7
Total.....	1975	23,894.3	14,102.8	37,997.1	28,131.7	19,614.0	47,745.7
	1976	27,189.7	15,409.5	42,599.2	31,828.4	21,513.9	53,342.3

¹ Preliminary actual expenditures.

² Revised intentions.

- Nil or zero.

expenditures account for a large and relatively variable proportion of gross national expenditures, the size and content of the investment program provides significant information about demands to be placed upon the productive capacities of the economy during the period covered by the survey. In addition, information on the relative size of the capital expenditures program planned, both in total and for individual industries, gives an indication of the views managements hold on prospective market demands in relation to present productive capacity. Non-capitalized repair expenditures on structures and on machinery and equipment are also given, but these are shown separately. By including these outlays, a more complete picture is provided of all demands likely to be made on labour and materials in accomplishing the program.





Stampede stadium, Calgary, Alta.

A new office building, Vancouver, BC.





Construction of a plant for the recovery of the resources of the Alberta Tar Sands, Fort McMurray, Alta.

Provincial Expenditures

The expenditures shown for each province or territory represent the value of construction and of machinery and equipment acquired for use within the province or territory. Such expenditures represent gross additions to the capital stock of the province or territory and are a reflection of economic activity in that area. However, the actual production of these assets may generate its major employment and income-giving effects in other regions. For example, the spending of millions of dollars on plants and equipment in western Canada may generate considerable activity in machinery industries in Ontario and Quebec as well as construction activity in the western provinces.

It should be appreciated that there are statistical difficulties in making a precise geographic allocation of past or anticipated investment, since many business firms operating in several provinces neither record nor plan their capital expenditures geographically. As a result, it has been necessary to use approximate breakdowns in many cases. Such is the case for investment in railway rolling stock, ships, aircraft and certain other items.

Table 2. Summary of capital and repair expenditures, by province, 1975¹ and 1976²
(million dollars)

Province or territory		Capital expenditures			Capital and repair expenditures		
		Construc- tion	Machinery and equipment ³	Sub- total	Construc- tion	Machinery and equipment	Total
Atlantic region:							
Newfoundland.	1975	548.8	179.1	727.9	625.7	338.9	964.6
	1976	580.7	185.1	765.8	669.0	360.2	1,029.2
Prince Edward Island	1975	82.3	33.6	115.9	99.7	45.1	144.8
	1976	73.7	37.9	111.6	91.5	49.4	140.9
Nova Scotia.	1975	630.4	276.5	906.9	760.0	406.7	1,166.7
	1976	787.4	291.1	1,078.5	924.8	431.7	1,356.5
New Brunswick.	1975	741.9	406.2	1,148.1	854.1	542.6	1,396.7
	1976	695.7	450.3	1,146.0	818.5	596.	1,414.6
Total, Atlantic region	1975	2,003.4	895.4	2,898.8	2,339.5	1,333.3	3,672.8
	1976	2,137.5	964.4	3,101.9	2,503.8	1,437.4	3,941.2
Quebec.	1975	5,966.8	2,982.5	8,949.3	6,918.2	4,169.6	11,087.8
	1976	6,743.0	3,165.4	9,908.4	7,776.0	4,448.5	12,224.5
Ontario.	1975	7,480.9	5,551.2	13,032.1	9,004.2	7,604.0	16,608.2
	1976	8,051.5	5,977.5	14,029.0	9,690.9	8,274.8	17,965.7
Prairie region:							
Manitoba.	1975	858.7	677.5	1,536.2	1,044.6	885.1	1,929.7
	1976	992.6	715.9	1,708.5	1,187.8	935.6	2,123.4
Saskatchewan.	1975	884.0	858.3	1,742.3	1,079.1	1,109.7	2,188.8
	1976	1,132.6	972.7	2,105.3	1,350.8	1,258.3	2,609.1
Alberta.	1975	3,331.8	1,576.3	4,908.1	3,834.6	2,037.4	5,872.0
	1976	4,325.8	1,935.2	6,261.0	4,890.5	2,467.8	7,358.3
Total, Prairie region. .	1975	5,074.5	3,112.1	8,186.6	5,958.3	4,032.2	9,990.5
	1976	6,451.0	3,623.8	10,074.8	7,429.1	4,661.7	12,090.8
British Columbia.	1975	3,007.2	1,408.3	4,415.5	3,524.8	2,281.4	5,806.2
	1976	3,357.3	1,510.7	4,868.0	3,951.7	2,481.8	6,433.5
Yukon Territory and Northwest Territories							
	1975	361.5	153.3	514.8	386.7	193.5	580.2
	1976	449.4	167.7	617.1	476.9	209.7	686.6
Total, Canada.	1975	23,894.3	14,102.8	37,997.1	28,131.7	19,614.0	47,745.7
	1976	27,189.7	15,409.5	42,599.2	31,828.4	21,513.9	53,342.3

¹ Preliminary actual expenditures.

² Revised intentions.

³ Capital expenditures on machinery and equipment include an estimate for "capital items charged to operating expenses", in the manufacturing, utilities and trade totals.



Extension of gas service lines into a new residential area.

Housing

As 1976 began, Parliament had just given approval to a new and modified range of housing programs under the National Housing Act (NHA). They were aimed at dealing with two major problems, the rising price of new housing and the low level of moderately priced housing production. In addition, there was a special concern that starts of rental housing achieve an acceptable level.

The Federal Housing Action Program, as this group of legislative amendments was called, was aimed directly at these problems. It expanded federal assistance for both home-ownership and rental housing to encourage the building industry to concentrate on the production of moderately priced housing. With 68,000 new dwellings qualifying under these two programs, the Federal Housing Action Program contributed to the significant moderation in house price increases that took place during 1976.

As the housing agency of the federal government, Central Mortgage and Housing Corporation (CMHC) aims to ensure that all Canadians have access to good housing at prices they can afford and within a satisfactory community environment. It pursues this objective by providing financial assistance under the NHA for the production of new housing and the development of required land and services, by enabling lower-income people to obtain housing that they could not otherwise afford and by helping where neighbourhoods and dwellings are in need of improvement. All this assistance plays a significant role in supporting housing and related activities in every province.

Of the 273,203 dwellings started in 1976, 117,970 units benefited from some form of assistance under the NHA, including NHA loan insurance. Of this total, 20,579 units were social housing, which included public housing and units being constructed by non-profit and co-operative groups, all for low- and moderate-income people. The remaining 97,391 units started with some form of NHA assistance were directed at the same income groups, but largely financed by the private sector.

Public housing, Toronto, Ont.





House being built on a rock face in Yellowknife, NWT.

Housing under construction, Vancouver, BC.



In the private sector there was a marked shift in emphasis toward the production of moderately priced housing, which helped to restrain, if not to reverse, the earlier trend of rising prices in new housing. This was the direct result of the NHA amendments that extended the arrangements for supplementary loans and subsidies for new, moderately priced, home-ownership and rental housing, whether funded by private funds through the approved lenders or by public funds through CMHC.

In 1976, as in other years, the most visible of CMHC's loan or investment operations were house construction, land development and sewerage installations. In addition the Residential Rehabilitation Assistance Program was seen for the first time as being responsible for the improvement of substantial numbers of older and run-down houses. Progress on this essential element of adequate housing for all Canadians at an affordable price was very encouraging.

Less apparent but equally demanding in terms of the resources of CMHC were its operations carried over from previous years, such as the support of a growing stock of subsidized housing units and the administration of a mortgage and investment portfolio now amounting to over \$9 billion and of real estate holdings of 21,682 dwelling units. Also within this demanding but relatively unseen category were CMHC's development and demonstration activities, its research and educational undertakings and its policy analysis operations—all sectors concerned with providing for the future.

Fishermen's homes in the village of Blow Me Down, Nfld.





Assembly of tractors at an implement plant in Winnipeg, Man.

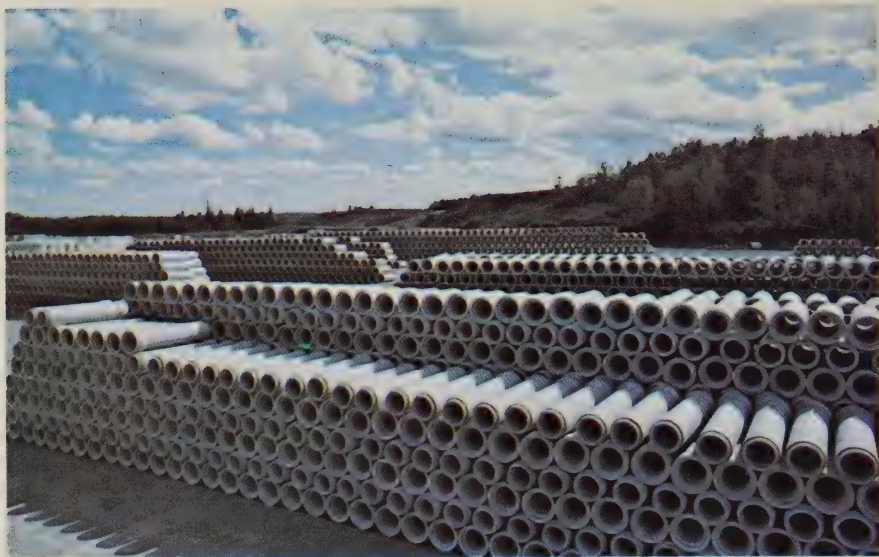
Manufacturing

Manufacturing is the largest of Canada's goods-producing industries. Because of its importance to the growth of national productivity, its high demand for capital goods and its contribution to exports, it plays an important role in the economy.

A monthly sample survey of households produced an estimate that an average number of 1,945,000 persons were being paid salaries or wages by the manufacturing industries in 1976, out of a total for all industries of 9,572,000.

Preliminary data from another monthly survey show that Canadian manufacturers shipped \$98.3 billion of their own products in 1976, an increase of 12.2 per cent over 1975. (By comparison, the annual average index of selling prices of manufacturing industries increased 5.0 per cent over the same period and the annual average index of industrial production increased 4.7 per cent.)

An exact measure of exports of manufacturers is not routinely compiled, but if exports of fabricated materials and end products are accepted as roughly equivalent to manufactured products, Canadian manufacturers did some processing on about two dollars out of every three of exports of Canadian products in 1976. Domestic



Cement pipes manufactured in Bagotville, Que.

exports of fabricated materials amounted to \$12.1 billion, compared with \$12.4 billion for end products. This nearly equal status indicates the importance of industrial materials produced for export.

However, the end products—roughly equivalent to highly manufactured goods, though including very small values of non-manufactured goods—have increased in value 17.5 times since 1961, when they amounted to only \$706 million, while those of fabricated materials have more than quadrupled from a 1961 figure of \$2,916 million. This is a striking reflection of the growth of those sectors of Canadian manufacturing producing more highly fabricated goods. For various reasons, these values are not strictly comparable with the value of overall shipments of manufactures by Canadian factories, but they give an impression of the approximate intensity of export activity as measured by shipments. The importance of production for export would be appreciably higher if it were feasible to use a measure of the Canadian value added that is exported, as the overall manufacturing shipments of Canadian manufacturers necessarily contain double counting of output from manufacturers supplying each other with inputs.

Most manufacturing activity in Canada is highly mechanized and Canadian factories thus constitute a large market for equipment. This is partly because many types of natural resources processing are inherently capital-intensive; that is, they employ a great deal of machinery, equipment and buildings in proportion to employees. Industries producing highly manufactured goods—like machinery and automobiles—are becoming increasingly important. In addition high living standards, reflected in high wages, bring about economy in the use of workers and this often leads to increased mechanization.



In 1976, according to a survey of investment intentions, it was anticipated that the manufacturing industries would be accounting for 27 per cent of all capital expenditures by business and government for new machinery and equipment. These expenditures represent, of course, not only the expansion of productive capacity but also some "deepening" of capital (an increase in capital per employee or per unit of product).

Increasing capital intensity of production has probably been a prime cause of the rise in productivity of each employee in the manufacturing industries. Physical output in the manufacturing industries, by man-hour worked, increased at an average rate of 4.0 per cent over the 1961-75 period.

The leading manufacturing industry in Canada in 1976, measured by the value of shipments of its own products, was petroleum refining. With a total value of \$7.2 billion, this industry's shipments were approximately \$1 billion greater than they had been in 1975, due to high price rises during the year.

The second-ranking industry in 1976 was motor vehicle manufacturers. An increase of \$1.1 billion in shipments reflected a slight increase in prices and a substantial increase in the volume of production (temporarily curbed in the latter part of the year because of a strike in October). Pulp and paper mills had the third-largest value of shipments at \$5.8 billion, up about \$600 million from the previous year as the industry recovered from major strikes that ended in early 1976.

Six industries, in descending order of magnitude, had shipments in the \$2 billion to \$4 billion range in 1976: slaughtering and meat processing, \$3.9 billion; motor vehicle parts and accessories, \$3.5 billion; iron and steel mills, \$3.5 billion; sawmills and planing mills, \$2.8 billion; dairy products industry, \$2.7 billion; and miscellaneous machinery and equipment manufacturers, \$2.4 billion. Eleven industries had shipments of between \$1 billion and \$2 billion: miscellaneous food processors, \$1.7 billion; smelting and refining, \$1.7 billion; metal stamping and pressing, \$1.6 billion; commercial printing, \$1.4 billion; communications equipment manufacturers, \$1.4 billion; feed industry, \$1.3 billion; publishing and printing, \$1.1 billion; manufacturers of industrial chemicals, \$1.0 billion; wire and wire products manufacturers, \$1.0 billion; and miscellaneous metal fabricating industry, \$1.0 billion. These preliminary estimates for 1976 are based on a monthly survey of shipments, inventories and orders in the manufacturing industries and are subject to revision by the results of the annual census of manufactures.

A new quarterly survey on business conditions recently developed by Statistics Canada helps overcome some problems involved in projecting changes in the manufacturing sector by asking executives for their qualitative assessments. A recent survey disclosed that in October 1976 respondents representing 68 per cent of manufacturing shipments expected the volume of production in the following three months to be higher than or about the same as in the previous quarter. This was a decline in expectations of 6 percentage points from the survey conducted in July of the same year. Shortage of skilled labour remained a major source of production difficulty for 13 per cent of the respondents, compared to 15 per cent in the previous quarter.

The largest four enterprises or groupings of companies had only 125 manufacturing establishments in 1972 and accounted for 9.7 per cent of all manufacturers'



Assembly of a turbine-driven compressor for the gas company in Chatham, Ont.

shipments, 7.1 per cent of manufacturing value added and 5.2 per cent of total employees. The largest 16 enterprises accounted for more than 22 per cent of manufacturing shipments. (While these data are not issued annually, figures on the size of manufacturing establishments are compiled each year.) The average size of a manufacturing establishment in 1974 was \$2.6 million worth of shipments of goods of own manufacture—or about 57 persons, measured by the number of persons employed. These averages are, however, greatly affected by the large number of small establishments operated by local or regional entrepreneurs in manufacturing industries throughout Canada. Actually, 53.3 per cent of the total work force in the manufacturing industries was in establishments employing 200 or more persons and there were 161 manufacturing establishments with more than 1,000 persons employed in 1974.

The proximity of the US, the interest of foreign firms in fabricated materials for use in foreign industry and the generally profitable character of Canadian manufacturing over many years have led to widespread investment in Canadian manufacturing by companies outside Canada. However, a special analysis of the census of manufactures for 1972 showed that Canadian-controlled firms none the less accounted for 57.2 per cent of all employment in the manufacturing industries; the proportion of manufacturing value added was somewhat lower, 50.0 per cent.

The 1975 profits of incorporated companies classified as manufacturing industries amounted to 7.4 per cent of total revenue, before taxes and certain extraordinary items. A preliminary estimate arrived at in October 1976 was that average weekly wages and salaries in Canadian manufacturing in 1976 amounted to \$247.96.

Table 3. Manufacturing statistics, selected years, 1920 to 1976

Year	Establishments	Employees	Salaries and wages	Value added by manufacture	Value of shipments of goods of own manufacture ¹
	No.	No.	\$'000	\$'000	\$'000
1920	22,532	598,893	717,494	1,621,273	3,706,545
1929	22,216	666,531	777,291	1,755,387	3,883,446
1933	23,780	468,658	436,248	919,671	1,954,076
1939	24,805	658,114	737,811	1,531,052	3,474,784
1944	28,483	1,222,882	2,029,621	4,015,776	9,073,693
1949	35,792	1,171,207	2,591,891	5,330,566	12,479,593
1953	38,107	1,327,451	3,957,018	7,993,069	17,785,417
1954	38,028	1,267,966	3,896,688	7,902,124	17,554,528
1955	38,182	1,298,461	4,142,410	8,753,450	19,513,934
1956	37,428	1,353,020	4,570,692	9,605,425	21,636,749
1957	33,551	1,340,948	4,778,040	..	21,452,343
1958	32,446	1,272,686	4,758,614	9,454,954	21,434,815
1959	32,075	1,287,809	5,030,128	10,154,277	22,830,827
1960	32,852	1,275,476	5,150,503	10,371,284	23,279,804
1961	33,357	1,352,605	5,701,651	10,434,832	23,438,956
1962	33,414	1,389,516	6,096,174	11,429,644	25,790,087
1963	33,119	1,425,440	6,495,289	12,272,734	28,014,888
1964	33,630	1,491,257	7,080,939	13,535,991	30,856,099
1965	33,310	1,570,299	7,822,925	14,927,764	33,889,425
1966	33,377	1,646,024	8,695,890	16,351,740	37,303,455
1967	33,267	1,652,827	9,254,190	17,005,696	38,955,389
1968	32,643	1,642,352	9,905,504	18,332,204	42,061,555
1969	32,669	1,675,332	10,848,341	20,133,593	45,930,438
1970	31,928	1,637,001	11,363,712	20,047,801	46,380,935
1971	31,908	1,628,404	12,129,897	21,737,514	50,275,917
1972	31,553	1,676,130	13,414,609	24,314,751	56,234,663
1973	31,145	1,751,066	15,220,033	28,825,008	66,779,710
1974	31,535	1,785,977	17,556,982	35,084,753	82,455,109
1975	..	1,708,000	19,471,000	37,317,000	87,597,700
1976	..	1,732,000	21,684,000	41,858,000	98,258,900

¹ Before 1952, data represent gross value of production.

.. Not available.

Note: Revised SIC and new establishment concept applied to data as of 1957. Further revisions made to data as of 1961.

Trade

Domestic Trade

The means by which goods and services are transferred from producers to end users are usually referred to as the channels of distribution. In Canada these encompass three distinct sectors of the domestic economy—retail trade, wholesale trade and community, business and personal services. Businesses generally operate within one or another of these sectors, although some are active in two or all three sectors (manufacturers' sales branches and co-operatives, for example, may be engaged in either wholesaling or retailing activities).

The channels of distribution are characterized by continuous change. In retailing and services, the volume of business transacted by franchised (or voluntary group) operations is increasing rapidly. Planned shopping centres continue to proliferate in the suburbs of cities, while in the central business districts merchants are locating their stores in newly-constructed shopping malls and multi-store, multi-level building developments. The commodity mix offered by retailers is expanding in a variety of directions and the spread of businesses into new areas and types of operation (for example, from the operation of stores into mail-order retailing) continues unabated.

In the midst of such change has come a significant increase in the kinds of business that compete for the consumer dollar and in the types of specialized agencies—some of which did not even exist 10 years ago—that serve the varied needs of modern businesses. Although all sectors of the economy have shared in these developments, it is in the service trades that the greatest impact has been felt. Increases in income and leisure time have contributed to the substantial sales growth in services and goods of a recreational nature and rising expertise in the marketing function has spurred the growing use of data processing services, market research houses, public relations firms, mailing-list agencies and other marketing and management consulting businesses.

Retail Trade

In 1975 sales in retail locations reached an estimated \$51,200 million, an increase of 14.9 per cent over 1974. During the period 1972-75 for which comparable data are available retail sales rose 50.1 per cent, chain store sales 57.7 per cent and independent store sales 44.9 per cent. The largest sales increases during this period occurred in the Yukon Territory and the Northwest Territories (74.3 per cent), Alberta (67.0 per cent) and Saskatchewan (64.5 per cent), while Ontario and Manitoba experienced the lowest rates of growth (46.7 per cent and 46.5 per cent respectively). Although Ontario and Quebec continued to account for nearly two thirds of all retail sales in Canada, their share of the retail market has been declining for many years, reaching a low of 62.4 per cent in 1975.

By kinds of business, the most substantial increase in sales for the period 1972-75 was recorded by jewellery stores (63.4 per cent), followed closely by motor vehicle

Table 1. Summary statistics on retail trade, 1972 and 1975
(million dollars)

	1972			1975		
	Chain stores	Independent stores	All stores	Chain stores	Independent stores	All stores
Kind of business						
Combination stores (groceries and meat)	4,166	2,035	6,201	6,734	2,994	9,728
Grocery, confectionery and sundries stores	244	1,276	1,520	375	1,880	2,255
All other food stores	60	660	720	87	810	897
Department stores	3,714	-	3,714	5,786	-	5,786
General merchandise stores	887	236	1,123	1,250	348	1,598
General stores	123	550	673	271	724	995
Variety stores	518	155	673	620	199	819
Motor vehicle dealers	95	6,145	6,240	126	10,058	10,184
Used car dealers	-	119	119	-	183	183
Service stations	297	1,945	2,242	704	2,598	3,302
Garages	-	445	445	-	555	555
Automotive parts and accessories stores	145	590	735	169	919	1,088
Men's clothing stores	104	412	516	179	485	664
Women's clothing stores	294	345	639	451	412	863
Family clothing stores	148	320	468	320	420	740
Specialty shoe stores	30	25	55	23	26	49
Family shoe stores	163	149	312	244	181	425
Hardware stores	87	346	433	91	490	581
Household furniture stores	87	363	450	145	549	694
Household appliance stores	35	120	155	39	161	200
Furniture, TV, radio and appliance stores	102	247	349	167	311	478
Pharmacies, patent medicine and cosmetic stores	187	840	1,027	333	1,155	1,488
Book and stationery stores . . .	33	94	127	88	104	192
Florists	7	120	127	8	163	171
Jewellery stores	101	160	261	183	244	427
Sporting goods and accessories stores	8	331	339	20	497	517
Personal accessories stores	88	431	519	166	514	680
All other stores	2,068	1,857	3,925	3,173	2,468	5,641
Total, all stores	13,791	20,316	34,107	21,752	29,448	51,200
Province						
Newfoundland	219	419	638	370	602	972
Prince Edward Island	51	105	156	93	148	241
Nova Scotia	438	664	1,102	697	922	1,619
New Brunswick	365	527	892	573	765	1,338
Quebec	2,704	5,908	8,612	4,391	8,421	12,812
Ontario	5,880	7,178	13,058	9,001	10,155	19,156
Manitoba	653	843	1,496	987	1,205	2,192
Saskatchewan	449	914	1,363	748	1,495	2,243
Alberta	1,215	1,513	2,728	2,043	2,514	4,557
British Columbia	1,777	2,210	3,987	2,779	3,160	5,939
Yukon Territory and Northwest Territories	40	35	75	70	61	131

- Nil or zero.



Byward Market, Ottawa, Ont.

dealers (63.2 per cent), family clothing stores (57.9 per cent), combination stores selling groceries and meat (56.9 per cent) and department stores (55.8 per cent). Only one kind of business, specialty shoe stores, lost ground between 1972 and 1975, registering an 11.2 per cent decline. However, several kinds of business recorded increases that were well below average—for example, variety stores, garages, all food stores other than combination stores, grocery, confectionery and sundries stores, men's clothing stores and household appliance stores.

The largest shares of the retail market were held during 1975 by motor vehicle dealers (19.9 per cent of total sales) and combination stores selling groceries and meats (19.0 per cent). If the sales of other food stores, used car dealers, service stations, garages and automotive accessories stores were also included, it would be found that well over half (55.1 per cent) of every dollar spent by household or personal consumers in 1975 was used to purchase food, cars or automotive services. The inclusion of stores selling mainly clothing and footwear—other “basic necessities” of life—would only increase this total by 5.3 per cent. The only other kind of business with a significant volume of sales was department stores; they captured 11.3 per cent of the retail market, a slight increase over the 10.9 per cent held in 1972.

Within the framework of retail trade, chain store organizations (those that operate four or more stores in the same kind of business under the same legal ownership) compete with independent retailers for a share of the consumer dollar. The market position of the chains, which has been improving slowly but steadily over the years, showed further gains during the 1972-75 period. In 1972 chain stores accounted for 40.4 per cent of total retail sales; by 1973 this figure had risen to 40.8 per cent; the following year it rose to 42.2 per cent; and in 1975 it reached 42.5 per cent. Some of this increase was due to the relatively strong growth in sales of department stores,

all of which are classified as chains. If such stores were excluded from both chain and total retail sales, the market share of chain organizations would have been 33.2 per cent in 1972 and 35.2 per cent in 1975.

Between 1972 and 1975 the share of the market held by chains increased in 17 of the 28 kinds of business for which data are available (including all other stores) and declined in only eight. Chain store organizations accounted for at least half of the total sales of department stores, in which all firms are classified as chains (100 per cent), general merchandise stores (78.2 per cent), variety stores (75.8 per cent), combination stores selling groceries and meat (69.2 per cent), family shoe stores (57.4 per cent) and women's clothing stores (52.2 per cent). Kinds of business in which independent store-owners increased their market share, even if only slightly, included general merchandise stores, variety stores, motor vehicle dealers, automotive parts and accessories stores, specialty shoe stores, hardware stores, household appliance stores and florists.

Direct Selling

Retail stores account for only a part (although the largest part) of the total volume of purchases made by household or personal consumers. Other channels of distribution that completely by-pass the traditional retail outlet—direct selling agencies, coin-operated vending machines and campus book stores, for example—reported total sales of \$1,656.9 million during 1975. Of this total, the direct selling activities of manufacturers, importers, wholesalers, mail-order agencies, book, newspaper and magazine publishers and other specialized agencies accounted





Candy shop, Victoria, BC.

for \$1,333.6 million, or 3.9 per cent of sales registered by comparable kinds of business in retail stores. In addition, vending machine operators reported total sales in 1975 of \$250.0 million and campus book stores contributed an additional \$73.3 million during the 1975-76 academic year.

The 1974 survey of direct selling in Canada showed that the largest proportion of such "non-store retailing" continues to be made by means of door-to-door canvassing. Sales of such commodities as cosmetics and costume jewellery, dairy products, newspapers and household electrical appliances, made on a door-to-door basis, accounted for 63.2 per cent of total direct selling. Sales of furniture re-upholstering and repairs, furniture, frozen foods and household electrical appliances in the showrooms and other premises of manufacturers provided an additional 18.0 per cent. Mail-order sales of such goods as books, phonograph records, magazines and newspapers represented 14.7 per cent and other channels accounted for the remaining 4.1 per cent of total direct selling.

Consumer Credit

Consumer credit refers to advances made to individuals for non-commercial purposes in the form of cash or credit against specific purchases of consumer goods. Such advances are made under contractual sales agreements or through use of credit cards by firms that extend credit in exchange for a promise of payment at a later date—generally by instalments. Statistics on consumer indebtedness do not include fully-secured loans, home improvement loans and residential mortgages; nor do they include interpersonal loans, bills owed to doctors, dentists, lawyers, etc., or credit extended by clubs and personal service establishments.

During 1975 consumer credit outstanding reached \$23,830 million—an increase of \$3,264 million, or 15.9 per cent, over the level recorded a year earlier. The largest growth in balances outstanding, 37.2 per cent, was experienced by trust and mortgage loan companies, followed by Quebec savings banks' personal loans, which rose 31.8 per cent over the 1974 year-end figure. The largest share of consumer credit outstanding was held by the chartered banks, which accounted for 55.3 per cent of the total, an increase over the 52.6 per cent held in December 1974.

As shown in Table 2, there have been some significant shifts over the past 20 years in the market share of the financial and other institutions that serve consumers' needs for credit. In 1955 sales finance and consumer loan companies accounted for 34.9 per cent and retail vendors for 29.9 per cent of consumer credit needs; banks and credit unions in aggregate supplied only 24.5 per cent of these needs. In 1965 the market share of retail vendors had shrunk 11.5 per cent, to 18.3 per cent, while that of the chartered banks and credit unions had risen 18.4 percentage

Table 2. Consumer credit in Canada—balances outstanding, selected holders, selected year-ends
(million dollars)

Credit holders/types of credit	1955	1960	1965	1970	1974	1975	Percentage change 1974-75
Sales finance and consumer loan companies:							
Instalment financing	616	886	1,198	1,136	1,169	1,152	-1.5
Cash loans under \$1,500	89	392	628	525	296	252	-14.9
Cash loans over \$1,500	173	100	348	1,190	1,501	1,503	+0.1
Chartered banks' personal loans	441	857	2,241	4,663	10,817	13,175	+21.8
Quebec savings banks' personal loans	2	6	16	22	44	58	+31.8
Life insurance companies' policy loans	250	344	411	759	1,066	1,157	+8.5
Credit unions and caisses populaires	174	433	813	1,493	2,762	3,243	+17.4
Department stores and other retail dealers	752	960	1,313	1,551	2,221	2,418	+8.9
Other credit-card issuers	20	43	72	186	274	338	+23.4
Public utility companies	—	—	116	181	271	330	+21.8
Trust and mortgage loan companies	—	—	—	—	145	190	+37.2
Total	2,517	4,021	7,156	11,706	20,566	23,825	+15.8

— Nil or zero.



The stock exchange in Winnipeg, Man.

points, to 42.9 per cent. By 1975 consumer credit held by the chartered banks and credit unions accounted for 69.1 per cent of the balances outstanding, while the market shares of sales finance and consumer loan companies and of retail vendors had diminished to 12.2 per cent and 10.1 per cent respectively.

Wholesale Trade

Wholesalers are primarily engaged in buying merchandise for resale to retailers, to farmers for use in farm production, to industrial, commercial, institutional or professional users or to other wholesalers. Also forming part of wholesale trade are those who act as agents, or brokers, in such transactions and who derive commissions from the purchase and/or sale of goods on behalf of others. In 1971, the most recent year for which data on total wholesale trade are available, Canadian wholesale establishments registered sales of \$37,414.3 million according to preliminary census tabulations, an increase of 18.3 per cent over the comparable total in 1966.

For statistical purposes wholesalers are grouped into five categories, the largest and most important of these being wholesale merchants. (The others are agents and brokers, primary product dealers, petroleum bulk tank distributors and manufacturers' sales branches.) The wholesale merchant category includes import and/or export merchants, voluntary group wholesalers, cash-and-carry wholesalers, drop shippers or desk jobbers, mail-order wholesalers, truck distributors and rack jobbers—all of whom buy and/or sell merchandise mainly on their own account. Estimated sales of wholesale merchants during 1974-75, as measured by a sample of reporting firms, are shown in Table 3.

Table 3. Estimated sales of wholesale merchants, 1974 and 1975

Trade group	Sales		Percentage change 1974-75
	1974 \$'000,000	1975 \$'000,000	
Total, all trades	43,210.2	45,377.1	+5.0
Consumer goods trades	18,866.1	20,987.0	+11.2
Automotive parts and accessories	2,529.2	2,808.5	+11.0
Motor vehicles	917.2	972.8	+6.1
Drugs and drug sundries	892.6	982.9	+10.1
Clothing and furnishings	396.2	415.9	+5.0
Footwear	96.0	92.9	-3.3
Other textiles and clothing accessories	851.3	829.4	-2.3
Household electrical appliances	897.0	993.1	+10.7
Tobacco, confectionery and soft drinks	1,342.7	1,555.6	+15.9
Fresh fruits and vegetables	751.3	795.2	+5.8
Meat and dairy products	1,083.1	1,090.9	+0.7
Floor coverings	424.3	426.3	+0.5
Groceries and food specialties	5,804.0	6,693.4	+15.3
Hardware	903.8	956.1	+5.8
Consumer goods residual	1,977.4	2,374.0	+20.1
Industrial goods trades	24,344.1	24,390.1	+0.2
Coal and coke	69.7	84.3	+20.9
Grain	4,267.3	4,278.2	+0.3
Electrical wiring supplies, construction materials, apparatus and equipment	798.2	856.7	+7.3
Other construction materials and supplies, including lumber	5,358.1	5,367.7	+0.2
Farm machinery	1,607.0	2,006.4	+24.9
Industrial and transportation equipment and supplies ...	3,888.5	4,496.9	+15.7
Commercial, institutional and service equipment and supplies	940.5	994.9	+5.8
Newsprint, paper and paper products	694.3	729.3	+5.1
Scientific and professional equipment and supplies	482.9	565.3	+17.1
Iron and steel	2,736.3	1,998.1	-27.0
Junk and scrap	1,024.2	614.7	-40.0
Industrial goods residual	2,477.1	2,397.6	-3.2

The relatively small increase of 5.0 per cent experienced by wholesale merchants between 1974 and 1975, in marked contrast to the 26.8 per cent rise during the preceding year, was attributable mainly to a general weakening in sales by industrial goods dealers, who recorded a total increase during 1975 of only 0.2 per cent. In this sector significantly rising sales were reported by dealers in farm machinery, in coal and coke, in scientific and professional equipment and supplies and in industrial and transportation equipment and supplies. However, these increases were almost entirely offset by the substantial declines in sales of wholesalers dealing in iron and steel and in junk and scrap metals. In the consumer goods sector, which rose 11.2 per cent during the year, the best results were registered by dealers in tobacco, confectionery and sundries, in groceries and food specialties, in automotive parts and accessories and in household electrical appliances.

Service Trades

Changes within the service trades can be measured best through the analysis of census data, since intercensal surveys provide only partial coverage of this large and diverse sector. In 1971 the service trades falling within the scope of the census reported total receipts (based on preliminary tabulations) of \$8,900.5 million. This figure included receipts of \$1,400.6 million reported by businesses in the services to business management group (lawyers and notaries, architects, consulting engineering services, etc.) and in other groups that had not previously been surveyed in the census. In comparable terms (that is, excluding the latter kinds of business) service trade receipts rose 63.5 per cent between 1966 and 1971.

The distribution of 1971 service trade receipts by kind-of-business group was as follows: amusement and recreation services, 7.8 per cent; services to business management, 26.8 per cent; personal services, 9.0 per cent; accommodation and food services, 44.4 per cent; and miscellaneous services, 12.0 per cent. If the kinds of business not previously surveyed were omitted, the revised 1971 distribution would be as follows, with the comparable 1966 proportions shown in parentheses: amusement and recreation services, 9.0 per cent (9.6 per cent); services to business management, 13.5 per cent (11.0 per cent); personal services, 10.7 per cent (13.0 per cent); accommodation and food services, 52.6 per cent (52.3 per cent); and miscellaneous services, 14.2 per cent (14.1 per cent).

Intercensal surveys show that: since 1971 restaurant receipts increased by 20.2 per cent, to \$1,980.5 million in 1975; accommodation receipts reached \$2,271.0 million in 1974, of which hotel receipts amounted to \$1,852.8 million, a 46.1 per cent increase over 1971; power laundries and dry cleaners had combined receipts of \$321.8 million in 1974, an increase of 46.1 per cent over 1971; and receipts of motion picture theatres and drive-ins rose to \$263.8 million (including taxes) in 1975, an increase of 70.3 per cent. Other intercensal surveys carried out in the service trade sector produced the following results: computer service industry, \$823.0 million in 1974; consulting engineering services, \$850.6 million in 1974; trade associations, \$276.9 million in 1974; advertising agencies, \$697.0 million in 1975; motion picture production, \$67.5 million in 1975; and motion picture distribution (film exchanges), \$114.9 million in 1975.

Co-operatives

The co-operative movement in Canada goes back to the end of the last century, although most of the more than 2,250 co-operatives were established in the period 1910-30. Most co-operatives¹ are rural and agricultural (or horticultural) in character, but during the past 20 years an important development has been the growth of consumer co-operatives serving the urban population.

There are four main groups of local co-operatives serving individuals. These are the marketing and supply co-operatives that market farmers' produce for them and sell merchandise to them, production co-operatives, fishermen's co-operatives and service co-operatives. In addition to these there are the wholesale co-operatives, whose primary function is to supply the local co-operatives.

Marketing and Supply Co-operatives

The marketing and supply co-operatives represent by far the largest sector of Canadian co-operatives, both in number and in volume of business. In 1974 there were 2,274 co-operatives in Canada, of which 1,123, or 49 per cent, were marketing and supply co-operatives. These had a total business volume of \$4,770 million, which represented 97 per cent of total co-operative turnover.

The level of co-operative activity in both marketing and supply remained relatively static from 1932 (when the present series of statistics was started) up to the start of World War II. From then until 1970 there was a regular and steady increase in trade; since 1970 the growth in trade has been meteoric. Even as recently as 1956 the total annual turnover of marketing and supply co-operatives was barely \$1 billion, and it had taken 30 to 40 years to reach that mark. The doubling of turnover to \$2 billion was achieved 11 years later in 1967 and a rise to \$3 billion turnover was reached only six years later in 1973. The figures for 1975, the latest year available, showed that the volume of business had reached \$5,542 million, an incredible increase of almost \$2 billion in two years.

The 1975 figure represents an increase of 55 per cent in business over 1973, of which only about two fifths could be attributed to inflation. (The consumer price index rose by 22 per cent during the same period.) Some of the increase was the result of a true growth in the co-operative share of the market, but the major factor was the record increases in the prices of some agricultural commodities; the prime example was grain, which contributed \$817 million of the \$1,181 million increase in the total value of produce marketed by co-operatives.

It is in the grain industry that co-operatives are most significant. Nearly 70 per cent of all grains and seeds are handled by co-operatives, compared with about 60 per cent of dairy products and around 15 per cent of livestock, poultry and eggs.

Mention was made earlier of the increasing development of co-operatives in the consumer field. It is worth noting that in 1975 co-operatives sold \$527 million worth of food products, \$164 million worth of hardware, \$273 million worth of petroleum and \$98 million worth of building materials.

¹This article does not cover credit unions or insurance and recreational associations.



Grain elevators at Maidstone, Sask.

Production, Fishermen's and Service Co-operatives

The revenue of production co-operatives, which are involved in such endeavours as community pastures, livestock feeding, woodcutting and co-operative farming, decreased in 1975 because of reductions in livestock feeding in western Canada and woodcutting in Quebec. The fishing co-operatives increased their business by 3 per cent in a year of rather mixed results.

Service co-operatives had a buoyant year in 1975 in many fields. New developments occurred in transportation, housing and gas utilities; the most outstanding development was the dental insurance plan in British Columbia.

Wholesale Co-operatives

The general upward trend in co-operative business was reflected in the revenues of the wholesale co-operatives. Overall turnover in 1975 was \$1,651 million, an increase of 19 per cent over 1974 and of 58 per cent over 1973. Most of these increases were in produce marketing, which rose by 29 per cent in 1975, while supply sales increased 15 per cent during the same period.

The Consumer Price Index

Measured in terms of the percentage change in annual average indexes, the all-items consumer price index (CPI) increased 7.5 per cent in 1976, compared to the 10.8 per cent advance recorded in 1975. This lower rate of increase was due largely to declining food prices and a deceleration of price advances for all the other major components except housing. Between December 1975 and December 1976 higher housing charges, which rose 11.1 per cent, contributed slightly over one half of the total change in the index, while increased transportation charges, up 10.7 per cent, accounted for one fifth of the total rise.

Reclassified in terms of goods and services, the goods component of the CPI advanced 4.9 per cent, based on annual averages, while the service component increased by 12.1 per cent.

Kensington Market, Toronto, Ont.



The consumer price indexes for regional cities measure the movements in consumer prices in each city. Between 1975 and 1976 the CPI increased in all regional cities, by amounts ranging from 6.7 per cent in Montreal and Quebec City to 9.7 per cent in Vancouver.

The purchasing power of the 1971 consumer dollar, which stood at 72 cents on average in 1975, declined to 67 cents in 1976.

Table 4. The consumer price index¹ and its major components for Canada, percentage change between annual average indexes

	1971 1970	1972 1971	1973 1972	1974 1973	1975 1974	1976 1975
All items	2.9	4.8	7.5	10.9	10.8	7.5
Food	1.1	7.6	14.6	16.3	12.9	2.7
All items excluding food	3.5	3.7	5.0	8.9	10.0	9.4
Housing	4.5	4.7	6.4	8.7	10.0	11.1
Clothing	1.5	2.6	5.0	9.6	6.0	5.5
Transportation	4.1	2.6	2.6	10.0	11.7	10.7
Health and personal care	2.0	4.8	4.8	8.7	11.4	8.5
Recreation, education and reading ...	3.3	2.8	4.2	8.7	10.4	6.0
Tobacco and alcohol	1.6	2.7	3.2	5.5	12.1	7.2

¹ Indexes prior to May 1973 incorporate 1957 expenditure weights; those from May 1973 forward are based on 1967 expenditures, except for items within the food component, which are based on 1969 detailed spending patterns.

Table 5. Consumer price indexes and major components for regional cities, percentage change between 1975 and 1976 (based on annual averages)

City	All items	Food	Housing	Clothing	Transportation	Health and personal care	Recreation, education and reading	Tobacco and alcohol
St. John's, Nfld.....	7.8	6.3	12.4	0.8	8.1	9.7	7.0	6.9
Halifax, NS.....	8.4	3.7	12.6	4.8	11.8	8.6	6.2	5.7
Saint John, NB.....	7.2	5.1	10.1	4.8	7.2	9.5	6.4	2.9
Quebec, Que.....	6.7	3.4	9.2	4.3	9.4	9.3	6.8	8.2
Montreal, Que.....	6.7	2.8	9.1	6.1	11.5	7.3	5.6	8.3
Ottawa, Ont.....	7.6	2.5	11.0	7.7	9.6	8.6	5.3	7.0
Toronto, Ont.....	7.3	1.9	10.5	5.2	10.9	8.6	5.6	7.2
Thunder Bay, Ont.....	8.8	3.8	12.9	5.1	11.7	9.9	7.3	6.9
Winnipeg, Man.....	8.7	3.7	14.7	4.8	9.3	9.8	6.0	7.6
Saskatoon, Sask.....	8.2	3.9	12.9	5.6	8.5	5.0	7.1	8.9
Regina, Sask.....	8.9	3.0	15.1	5.5	9.1	7.5	8.9	8.5
Edmonton, Alta.....	8.0	2.4	14.1	5.3	8.8	7.8	6.3	3.5
Calgary, Alta.....	8.3	2.8	14.8	5.0	9.1	9.0	6.5	3.6
Vancouver, BC.....	9.7	4.0	12.3	6.4	17.7	9.3	6.7	7.4



Grains are among Canada's major exports.

International Trade

Canada's merchandise exports and imports reached record levels in 1976 of \$38,030 million and \$37,400 million, gains of 15 per cent and 8 per cent respectively. After adjustment of these customs totals to meet the concepts and definitions used in the system of national accounts, the relative advances changed to 14 per cent for exports and 8½ per cent for imports. The refinements include timing adjustments to certain exports figures, incorporation of progress payments on capital equipment, deduction of the transportation charges included in some customs documents and reduction of some customs values to reflect transaction prices.

On a balance-of-payments basis there was a trade surplus of some \$1,100 million in 1976, in contrast to the deficit of \$639 million in 1975, which had been the first negative balance since 1960.

Exports (Customs basis)

The United States remained Canada's most important customer in 1976, taking \$25,800 million (close to 68 per cent) of total exports, up from 65½ per cent in 1975. Other important export destinations were Japan, the United Kingdom and the

Table 6. Exports, by leading countries, 1974-76
(million dollars)

Country	1974	1975	1976
United States	21,399	21,652	25,783
Japan	2,231	2,122	2,391
United Kingdom	1,929	1,789	1,848
Federal Republic of Germany	557	609	704
Italy	468	479	551
USSR	32	419	536
Belgium and Luxembourg	371	381	479
Netherlands	396	481	447
France	324	350	402
Australia	325	252	365

Table 7. Exports, by commodities, 1974-76
(million dollars)

Commodity	1974	1975	1976
Wheat	2,065	2,001	1,706
Animals and other edible products	1,806	2,096	2,530
Metal ores and concentrates	2,376	2,231	2,502
Crude petroleum	3,420	3,052	2,288
Natural gas	494	1,092	1,616
Other crude materials	1,503	1,576	1,848
Lumber and softwood	1,254	949	1,605
Pulp	1,889	1,827	2,172
Newsprint	1,726	1,743	1,993
Fabricated metals	2,979	2,692	3,184
Other fabricated materials	2,848	2,629	3,148
Motor vehicles and parts (partial)	5,717	6,349	8,141
Other machinery and equipment	2,866	3,379	3,545
Other domestic exports	731	709	935
Re-exports	767	778	815
Total exports	32,441	33,103	38,028

Federal Republic of Germany, followed by Italy and the USSR. The People's Republic of China, an important grain purchaser in earlier years, was not among the 10 leading countries in 1976.

The traditional commodities in Canada's foreign trade generally retained their standings in 1976. At 21½ per cent, motor vehicles and parts accounted for a share of total exports similar to their share in 1973, but the proportion had been lower in the intervening years. Crude oil and natural gas constituted about 10 per cent of aggregate exports, down from 12½ per cent in 1975, as the increase in the value of natural gas delivery to the US only partially offset the drop in petroleum shipments. Exports of ores, refined metals and forestry products expanded in 1976 in response



Loading paper and aluminum for export.

to renewed economic activity in principal markets abroad. By stage of fabrication, the proportion of manufactured goods rose slightly to about 35 per cent of total exports in 1976, but was still considerably below ratios recorded earlier in the 1970s. Crude materials' share fell three percentage points to 31 per cent, while the proportion for fabricated materials rebounded to 34 per cent from its unusually small share of 31½ per cent in 1975.

The Toronto waterfront.





The port of Halifax, NS.

Imports (Customs basis)

Some \$25,700 million (about 68½ per cent) of imports entered Canada from the US in 1976, up a bit over the share in the previous year. Yielding second position to Japan, the United Kingdom stood fourth. Venezuela was in third place, as imports of its crude oil in 1976 displaced petroleum imports from the Middle East to some extent. From the fifth place down, the rankings were unchanged from 1975—Federal Republic of Germany, Iran, Saudi Arabia, France, Italy and Australia.

Automotive products and other equipment and machinery again represented approximately half of the imports in 1976. The share for motor vehicles and parts rose from 23½ per cent to about 25 per cent, while other equipment and machinery declined one percentage point to 26 per cent. At 9 per cent of total imports, the share for crude oil decreased slightly from 1975, as the delivery of western Canadian oil by pipeline to Montreal commenced in the middle of the year. Manufactured goods accounted for some 63½ per cent of all imports in 1976, which was higher than in 1975 but appreciably below its share in some preceding years. At 18 per cent, the share for crude materials was unchanged from 1975, but the share for fabricated materials dropped to about 18½ per cent in 1976.

Table 8. Imports, by leading countries, 1974-76
(million dollars)

Country	1974	1975	1976
United States	21,357	23,559	25,662
Japan.....	1,430	1,205	1,524
Venezuela	1,291	1,107	1,295
United Kingdom.....	1,126	1,222	1,153
Federal Republic of Germany.....	767	795	818
Iran.....	618	758	695
Saudi Arabia.....	319	746	482
France	395	487	438
Italy	316	380	365
Australia	335	345	341

A freighter passing through the Welland Canal in Ontario.





Air cargo being unloaded.

Table 9. Imports, by commodities, 1974-76
(million dollars)

Commodity	1974	1975	1976
Meat and fish.....	314	338	546
Fruits and vegetables.....	693	774	861
Animals and other edible products.....	1,509	1,571	1,467
Coal.....	303	576	544
Crude petroleum.....	2,646	3,304	3,272
Other crude materials.....	1,124	1,207	1,274
Textiles.....	817	740	839
Chemical products.....	1,537	1,476	1,679
Fabricated metals.....	2,433	1,992	1,840
Other fabricated materials.....	1,695	1,736	1,841
Motor vehicles and parts (partial).....	7,094	8,137	9,264
Other machinery and equipment.....	8,414	9,313	9,674
Other imports.....	3,113	3,472	4,290
Total imports.....	31,692	34,636	37,391

Price and Volume Changes

Rates of advance in the average prices of both exports and imports have decreased over the past few years. Export prices rose 32½ per cent in 1974, 11 per cent in 1975 and some 2½ per cent in 1976. Average import prices increased 23½ per cent in 1974, 15½ per cent in 1975 and only fractionally in 1976. Canada's terms of trade (the ratio of export to import prices) thus improved slightly in 1976. After adjustment for the effects of the moderate price inflation in 1976, the growth in the volume of exports was roughly 12 per cent and real imports increased about 7 per cent.



Sulphur awaiting export from Vancouver harbour.

Balance of International Payments

The Canadian balance of international payments summarizes transactions between residents of Canada and those of the rest of the world. International transactions in goods, services, transfers and capital have an important effect on the Canadian economy and monetary system, so the balance of payments accounts form an integral part of the system of national accounts. Transactions in goods and services are also an important constituent and determinant of the gross national product (GNP), while the capital account of the balance of payments forms a sector in the financial flow accounts.

Sources of balance of payments data are as varied as the range of transactions included in each of the accounts. A considerable amount of the information used originates from annual, quarterly and monthly surveys carried out by the Balance of Payments Division of Statistics Canada. Other divisions of Statistics Canada, other government departments and the Bank of Canada all provide information concerning transactions between residents of Canada and non-residents.

Capital Movements

Capital movements between Canada and other countries during 1975 produced a record net inflow of \$4,561 million, substantially higher than the net inflow of \$1,516 million recorded in 1974. Long-term capital inflows amounted to \$4,106 million and short-term capital inflows to \$455 million. However, these massive inflows were less than the current account deficit of \$4,965 million and were accompanied by a reduction in Canada's net official monetary assets of \$404 million.

Direct Investment. Net inflows for foreign direct investment in Canada, which consists of the investment of parent companies in their subsidiaries and affiliates in

Canada, amounted to \$630 million in 1975, compared with \$725 million in 1974. The manufacturing and mining sectors experienced a net inflow of funds but net outflows occurred in the petroleum and natural gas sector, due mainly to the acquisition of foreign-owned assets by the Canada Development Corporation. Canadian direct investment abroad declined by \$125 million to \$650 million; however, this figure was still high by historical standards. Investments abroad by companies in the mining and manufacturing sectors, each constituting about one quarter of total Canadian direct investment abroad, were the most important elements in the annual outflow, followed by the financial and petroleum sectors.

Security Transactions. International transactions in Canadian and foreign long-term portfolio securities gave rise to a record net inflow of \$4,727 million, surpassing by a wide margin the previous record inflow of \$1,772 million in 1974. At \$5,150 million, sales of new Canadian issues abroad were of unprecedented magnitude.

The value and number of new Canadian issues floated on the European market reached a record level of \$500 million in 1975, compared to \$63 million in 1974; traditionally, most foreign funds acquired by Canadian borrowers originate in the United States. The removal of the 15 per cent Canadian withholding tax on interest payments to non-residents on certain types of new corporate issues, the high credit rating of the borrowers and the high coupon rates offered made these issues highly desirable to non-residents, as did the combination of generally lower interest rates in the European market and the less costly registration requirements there.

Trading in outstanding Canadian bonds and debentures also reached a record high during 1975, with net sales of \$302 million, which were \$26 million higher than in

A shipment of PEI potatoes.



1974 but only marginally above the previous record of \$292 million in 1972. Retirements of Canadian securities during the year resulted in a net outflow of \$691 million, \$65 million more than in 1974 but \$50 million below the 1973 figure. Sales in Canada of new foreign securities amounted to \$69 million, retirements of foreign securities held by Canadians were estimated at \$12 million and transactions in outstanding foreign securities resulted in a net inflow of \$18 million.

Other Capital Movements in Long-term Forms. Development assistance outflows in the form of soft loans and subscriptions from the Canadian government to developing countries and international development agencies totalled \$378 million, the highest annual outflow since 1947, of which 70 per cent was in the form of bilateral loans. Repayments on outstanding post-war loans led to a net capital inflow of \$40 million, up \$2 million from the previous year's inflow. The financing of medium- and long-term export credits extended directly or indirectly at the risk of the Canadian government resulted in a net capital outflow of \$397 million, down substantially from the record outflow of \$588 million in 1974. Other capital movements in long-term forms consisted of bank and other long-term loans, mortgage investments, movements of insurance funds and deferred migrants' capital, which represents funds left abroad by migrants at the time of their migration; these transactions led to a net capital inflow of \$134 million, down \$85 million from the 1974 figure.

Capital movements in short-term forms led to inflows of \$455 million, down \$200 million from the inflow recorded in 1974. In the first quarter the net inward movement of short-term capital amounted to \$1.3 billion, but it was followed by a net outflow in the rest of the year. Net foreign currency claims of the Canadian chartered banks on non-residents decreased, leading to a net capital inflow of \$88 million, a substantial swing from the net outflow of \$1,354 million reported in 1974. Increased holdings of Canadian dollar deposits by non-residents led to a net capital inflow of \$557 million, slightly down from the record inflow of \$592 million in 1974. Trading in money market paper (consisting of Government of Canada treasury bills, commercial paper, finance company paper and other short-term paper) produced a net inflow of \$442 million, up substantially from the net inflow of \$154 million recorded in 1974. There were net inflows of \$217 million in finance company paper, \$147 million in other short-term paper, \$41 million in commercial paper and \$37 million in Government of Canada treasury bills.

An increase in foreign currency assets held abroad by the Canadian non-bank sector led to a net capital outflow of \$236 million, a substantial shift from the net inflow of \$1,590 million recorded in 1974, when residents reduced a large portion of their foreign assets. Government of Canada demand notes held by international investment agencies led to a net capital outflow of \$4 million, as international agencies decreased their holdings of these non-interest-bearing, non-negotiable notes as part of Government of Canada loans and subscriptions. Other finance company obligations, consisting of borrowing from non-resident banks and from parent and affiliated companies abroad, resulted in a net capital outflow of \$92 million, a swing from the net inflow of \$158 million recorded in 1974. All other short-term capital transactions (including the balancing item, which represents unidentified transactions in both the current and capital accounts) led to a net



Loading potash and lumber for shipment from Vancouver.

capital outflow of \$700 million (including a balancing item of about \$600 million), up \$155 million from the 1974 net outflow.

Official International Monetary Assets and Liabilities

Canada's international reserves decreased by US\$499 million during 1975 to reach US\$5,325 million at the end of 1974. This change represented a net decrease of US\$400 million as a result of transactions passing through the reserve accounts and a decrease of US\$99 million due to the appreciation in the US dollar value of the Special Drawing Right (SDR). Expressed in Canadian currency, the decrease in reserves due to transactions amounted to \$400 million; it was accounted for by a decrease of \$586 million in holdings of US dollars and by increases of \$153 million in Canada's reserve position at the International Monetary Fund (IMF), \$7 million in holdings of SDRs and \$4 million in holdings of other convertible currencies. The increase in Canada's reserve position at the IMF was partly due to drawings on Canada's commitment of \$300 million to the IMF's oil facility, which was established in August 1974 to assist members with balance-of-payments problems caused by increases in petroleum prices; Canada's commitment became fully drawn during the third quarter of 1975.

Since July 1, 1974, the SDR has been valued by the IMF in terms of a basket of currencies of 16 countries. Relative weights for each currency are broadly proportionate to the country's exports, but are modified to recognize that the share in trade does not necessarily give an adequate measure of a currency's weight in the world economy; the Canadian dollar accounts for 6 per cent of the total weight.

Balance of International Indebtedness. Preliminary estimates based on available data indicated that Canada's balance of international indebtedness had reached about \$43 billion by the end of 1975. Long-term foreign investment had increased by over \$7.5 billion to a total of \$68 billion, mainly reflecting an inflow of long-term portfolio capital and an increase in earnings accruing to non-residents. Other long-term liabilities, including non-resident equity in Canada's assets abroad, brought the total of long-term liabilities to about \$72 billion. Various short-term claims on Canadians increased the total of Canada's external liabilities to over \$81 billion.

In 1975 Canada's current account deficit rose to a record \$4,965 million, almost \$3.5 billion greater than in 1974. The main factor in the increase in the deficit over the previous year was a sharp contraction in the merchandise trade balance, which swung from a \$1.7 billion surplus in 1974 to a \$639 million deficit in 1975. The deficit on non-merchandise transactions continued to expand, increasing by \$1.1 billion to \$4,326 million.

Paper from Quebec on its way to foreign markets.



Finance

Public Finance

Powers and Responsibilities of the Various Levels of Government

The British North America (BNA) Act and its subsequent amendments allocate the distribution of power between the federal Parliament and the provincial legislatures. The federal government was authorized to make laws relating to "the raising of money by any mode or system of taxation"; it is not restricted in any way in matters of taxation, so it imposes both direct taxes on income and indirect taxes such as customs duties, excise duties and a manufacturer's sales tax. The provincial governments, on the other hand, have the power to impose "direct taxation within the province in order to the raising of revenue for provincial purposes". A direct tax is generally recognized as one that "is demanded from the very person who it is intended or desired should pay it"; as a result of court decisions, the concept enjoys fairly broad interpretation and allows the provinces to impose income taxes, general sales taxes at the retail level, succession duties and an assortment of other levies on the ultimate purchaser or user of goods and services.

The BNA Act also empowers the provincial legislatures to make laws regarding "municipal institutions in the province". As a result, municipalities derive incorporation, with its associated fiscal and other powers, from their respective provincial governments. The principal revenue-producing taxes available to municipalities are those levied on the ownership and occupancy of property situated within their jurisdictions. The most significant taxes are those levied on real property, followed by business taxes and special assessments including local improvement charges.

Organization of Government

The organization of government is not uniform from one level to another, nor is it uniform among governments at the same level. Each government operates its affairs in the manner that it finds most convenient to its resources and most suitable to the discharge of its responsibilities. The resulting differences in the organizational structures of the various governments raise problems if one seeks to compare public finance from one government to another. However, by consolidating the transactions of all levels of government to form only one governmental universe, a measure of the collective impact of government financial activities upon the general public can be obtained, as is illustrated in the first columns of Tables 1 and 2.

Intergovernment Fiscal Arrangements

Various federal-provincial agreements have been entered into by levels of government to harmonize taxing and spending policies. To assist the provinces in an efficient and economical process of tax collection, the federal government has entered into tax collection agreements with most of the provinces under the

Federal-Provincial Fiscal Arrangements Act. All provinces except Quebec signed agreements in respect of personal income tax and all provinces except Quebec and Ontario signed in respect of corporation income tax.

The federal system of government, with its constitutional division of taxing powers and functional specialization of expenditure responsibilities, necessitates intergovernmental transfers to alleviate fiscal deficiencies. These intergovernment transfer payments are classified for statistical purposes as either "general purpose" transfer payments or "specific purpose" transfer payments. Transfers that are not allocated to a particular functional expenditure are listed under the heading of general purpose transfers and may be further sub-classified by major program.

General Purpose Transfers. Included in the category of general purpose transfers are the statutory subsidies, established under the BNA Act and subsequent amendments, that the federal government remits to the provinces; these subsidies primarily provide a fixed annual grant in support of provincial legislatures and annual allowances based upon the provincial population. Under the Public Utilities Income Tax Transfers Act the federal government also remits to the provinces 95 per cent of the tax it collects from non-government-owned public utility companies that generate or distribute electrical energy, gas and steam; the intent of this policy is to make available to the provinces tax revenue from companies exploiting provincial natural resources.

By virtue of the Federal-Provincial Fiscal Arrangements Act the Minister of Finance pays to a province, where applicable, a revenue equalization payment, a revenue stabilization payment, a tax revenue guarantee and 20 per cent of the

The Icefields Parkway, Jasper National Park, Alta.





The promenade along the cliff edge, Quebec City.

federal tax under Part IX of the Income Tax Act. The most important payments are made under the revenue equalization program, the basic philosophy of which is that all Canadian citizens are entitled to a standard of public services that is fairly comparable in all the various regions of the country. Thus, the federal government makes part of the nation's wealth available, from its general revenue collected in all provinces, to provinces with incomes lower than the national average income.

Under the Established Programs (Interim Arrangements) Act the federal government may enter into agreements with any province that wishes to assume full financial and administrative responsibilities for certain programs in return for fiscal compensation. The province of Quebec alone availed itself of this legislation and consequently has a larger proportion of the federal income tax field.

Government property is generally exempt from taxation by another level of government. Where the property would normally be subject to a levy but is exempt for constitutional considerations, a grant is made to the municipality, the province or other local taxing authorities in lieu of the taxes the community must forego because of the exempt status of the property.



A classroom in Bragg Creek, Alta.

Specific Purpose Transfers. The second category of intergovernment transfer payments is referred to as specific purpose transfers and is related to particular expenditure functions.

Most of the federal-provincial joint programs are of the variety whereby one level of government reimburses another for an agreed-upon portion of the cost of a specified program. The largest such payments are made under the Hospital

Snow removal, Toronto, Ont.





Victoria, BC.

Insurance and Diagnostic Services Act, whereby the federal government shares the cost of specified hospital services with provinces providing hospital insurance and diagnostic services. Other large outlays are made under the Canada Assistance Plan and the Post-secondary Education Adjustment Payments; under the former program the federal government makes contributions toward the cost of providing assistance and welfare services to persons in need and under the latter the federal government contributes toward the financing of part of the operating costs of the provinces' post-secondary education.

Most provincial government transfer payments take the form of specific purpose transfers to local entities. Among such transfers, the largest are contributions to elementary and secondary education, which constitute a major source of funds for financing local school boards' expenditures.

Financial Transactions of the Various Levels of Government in the Fiscal Year Ended Closest to December 31, 1973

Tables 1 to 4 provide information on the revenue, expenditure, assets and liabilities of the various levels of government for the fiscal year that ended closest to December 31, 1973. The fiscal years concerned were the period April 1, 1973, to March 31, 1974, for the federal and provincial governments and the period January 1, 1973, to December 31, 1973, for most local governments.

The data are cast in the financial management statistical framework, which makes use of the financial statements of the various governments as its main source of information. This framework also standardizes government operations in order to arrive at statistics that are comparable among governments and between levels of government. As a result, the data presented differ from the related transactions reported in the financial statements of the individual governments.

Table 1. Revenue of federal, provincial and local governments
(fiscal year ended closest to December 31, 1973)

Source of revenue	All governments consolidated			Federal government			Provincial governments			Local governments		
	\$'000	Amount	Share of total revenue %	\$'000	Amount	Share of total revenue %	\$'000	Amount	Share of total revenue %	\$'000	Amount	Share of total revenue %
Taxes:												
Personal income taxes	13,616,120	9,225,804	36.8				4,390,316		19.6			...
Corporation income taxes	4,914,210	3,709,978	14.8				1,204,232		5.4			...
General sales taxes	6,598,816	3,590,338	14.3				3,005,904	2,574	13.4			-
Real property taxes	3,909,455	...	...				63,810	3,845,645	36.6			36.6
Customs duties	1,384,648	1,384,648	5.5				...		...			...
Motive fuel taxes	1,419,401	...	...				1,419,401		6.3			...
Health insurance premiums ¹	689,730	...	...				689,730		3.1			...
Social insurance levies ¹	1,524,147	1,016,620	4.0				507,527		2.3			...
Universal pension plan levies ²	1,355,255	997,598	4.0				357,657		1.6			...
Other taxes	3,148,981	1,716,468	6.8				1,035,713	396,800	4.6			3.8
Sub-total	38,560,763	21,641,454	86.2				12,674,290	4,245,019	56.6			40.4
Natural resources	1,251,799	13,964	-				1,237,835		5.5			...
Privileges, licences and permits	821,740	24,155	0.1				683,143	114,442	3.0			1.1
Other revenue from own sources	7,078,768	3,422,180	13.7				2,782,450	1,143,459	12.4			10.9
General purpose transfers from other levels of government	-	-	-				1,827,404	699,059	8.1			6.7
Specific purpose transfers from other levels of government	-	-	-				3,236,411	4,297,970	14.4			40.9
Total revenue	47,713,070	25,101,753	100.0				22,441,533	10,499,949	100.0			100.0

¹ Covers contributions for workmen's compensations, unemployment insurance and vacation-with-pay schemes.

² Covers contributions to the Canada and Quebec Pension Plans.

... Not applicable.

- Nil or zero.

Table 2. Expenditure of federal, provincial and local governments
(fiscal year ended closest to December 31, 1973)

Expenditure	All governments consolidated		Federal government		Provincial governments		Local governments	
	\$'000		Amount	Share of total expenditure %	Amount	Share of total expenditure %	Amount	Share of total expenditure %
			\$'000		\$'000		\$'000	
General government.....	2,916,406		1,382,044	5.7	1,078,554	4.9	455,808	4.1
Protection of persons and property ¹	4,178,242		2,529,163	10.4	748,080	3.4	900,999	8.0
Transportation and communications.....	4,791,817		1,708,889	7.0	1,742,334	7.9	1,340,594	11.9
Health.....	6,069,434		166,728	0.7	5,751,028	26.1	151,678	1.3
Social welfare.....	10,539,526		7,547,246	31.1	2,566,946	11.6	425,334	3.8
Education.....	7,303,057		331,991	1.4	2,245,620	10.2	4,725,446	42.0
Environment.....	1,293,479		202,547	0.8	188,398	0.8	902,534	8.0
Other expenditure.....	9,921,012		5,020,182	20.7	2,977,230	13.5	1,923,600	17.2
Intergovernment sales of goods and services.....	-		67,935	0.3	201,387	0.9	-	-
General purpose transfers to other levels of government.....	-		1,882,494	7.8	608,089	2.8	-	-
Specific purpose transfers to other levels of government:								
for transportation and communications.....	-		55,862	0.2	349,694	1.6	5,252	-
for health.....	-		1,784,659	7.4	41,134	0.2	386,003	3.4
for social welfare.....	-		562,146	2.3	234,294	1.1	27,195	0.3
for education.....	-		587,408	2.4	3,051,243	13.8	128	-
for other purposes.....	-		447,563	1.8	258,954	1.2	3,243	-
Sub-total-specific purpose transfers.....	-		3,437,638	14.1	3,935,319	17.9	421,821	3.7
Total expenditure.....	47,012,973		24,276,857	100.0	22,042,985	100.0	11,247,814	100.0

¹ Includes national defence.

- Nil or zero.

Table 3. Financial assets of federal, provincial and local governments
(fiscal year ended closest to December 31, 1973)

Financial assets	Federal government			Provincial governments			Local governments		
	Amount		Share of total financial assets %	Amount		Share of total financial assets %	Amount		Share of total financial assets %
	\$'000			\$'000			\$'000		
Cash on hand or on deposit	440,277		1.1	2,582,627		12.4	549,807		12.3
Receivables.....	399,259		1.0	1,098,094		5.3	1,298,569		29.1
Loans and advances	23,087,791		56.5	3,566,946		17.1	5,049		0.1
Investments									
Canadian securities	14,980,702		36.7	10,547,269		50.6	1,064,202		23.8
Foreign securities	775,988		1.9	...		...	...		...
Sub-total—investments	15,756,690		38.6	10,547,269		50.6	1,064,202		23.8
Other financial assets	1,166,304		2.8	3,050,791		14.6	1,550,905		34.7
Total financial assets	40,850,321		100.0	20,845,727		100.0	4,468,532		100.0

...Not applicable.

Table 4. Liabilities of federal, provincial and local governments
(fiscal year ended closest to December 31, 1973)

Financial liabilities	Federal government			Provincial governments			Local governments		
	Amount		Share of total liabilities %	Amount		Share of total liabilities %	Amount		Share of total liabilities %
	\$'000			\$'000			\$'000		
Borrowings from financial institutions	...	...		383,230	1.8		1,057,127	8.4
Payables	8,793,772	19.9		1,276,922	5.8		735,700	5.9	
Loans and advances	-	-		1,384,050	6.3		-	-	
Bonds and debentures	29,171,365	66.0		18,254,440	83.2		10,250,606	81.7	
Other liabilities	6,209,372	14.1		642,233	2.9		505,116	4.0	
Total liabilities	44,174,509	100.0		21,940,875	100.0		12,548,549	100.0	

... Not applicable.
- Nil or zero.



The Bear River Bridge, Digby, NS.

Federal Government Transactions. In the period under review the federal government derived a revenue of \$25,101,753,000 and incurred an expenditure of \$24,276,857,000, thus realizing a surplus of \$824,896,000. Of the federal revenue 36.8 per cent was obtained from personal income tax, 14.8 per cent from corporation income tax and 14.3 per cent from general sales tax; these three sources accounted for 65.9 per cent of the total. Social welfare, transfers to other levels of government (mostly provincial) and protection of persons and property (mainly national defence) accounted for 31.1, 21.9 and 10.4 per cent respectively (63.4 per cent collectively) of the total federal expenditure.

The financial assets of the federal government amounted to \$40,850,321,000 and its liabilities to \$44,174,509,000 on March 31, 1974. Of its financial assets 56.5 per cent were in the form of loans and advances and 38.6 per cent pertained to investments in securities; 66.0 per cent of its liabilities related to bonds and debentures and 19.9 per cent to payables.

Provincial Government Transactions. In the fiscal year 1973-74 total revenues of provincial governments amounted to \$22,441,533,000 and total expenditures were \$22,042,985,000, leaving them with a surplus of \$398,548,000 altogether. Health insurance premiums and the levies on personal income, general sales, motive fuel and corporation income provided 3.1, 19.6, 13.4, 6.3 and 5.4 per cent respectively (47.8 per cent collectively) of total revenues. Provincial governments also received 22.5



1.



2.

3.



4.



1. Toronto, Ont.
2. Banff, Alta.
3. Edmonton, Alta.
4. Halifax, NS.



Charlottetown, P.E.I.

per cent of their revenues in the form of transfers from other governments (mainly from the federal government). Health, transfers to other levels of government, education and social welfare accounted for 26.1, 20.7, 10.2 and 11.6 per cent respectively (68.6 per cent collectively) of total expenditures.

On March 31, 1974, the total financial assets of provincial governments stood at \$20,845,727,000 and their total liabilities at \$21,940,875,000. Of their financial assets 50.6 per cent were in the form of investments in securities and 17.1 per cent related to loans and advances, while 83.2 per cent of their liabilities were covered by bonds and debentures.

Local Government Transactions. During the fiscal year ended closest to December 31, 1973, local governments had total revenues of \$10,499,949,000 and total expenditures of \$11,247,814,000. They thus incurred a total deficit of \$747,865,000. Real property taxes and transfers from other levels of government (mainly from provincial governments) produced 36.6 and 47.6 per cent respectively of total revenues. Education, transportation and communications, protection of persons and property, and environment accounted for 42.0, 11.9, 8.0 and 8.0 per cent respectively (69.9 per cent collectively) of total expenditures.

At the end of the fiscal year the total financial assets of local governments amounted to \$4,468,532,000 and total liabilities to \$12,548,549,000. Most of these financial assets were in the form of receivables and investments in securities (29.1 and 23.8 per cent respectively), while their liabilities related mostly to bonds and debentures (81.7 per cent of the total).

Currency and Banking

Canada has a decimal currency with 100 cents to the dollar. The Bank of Canada has the sole right to issue notes for circulation in Canada and these notes, together with the coinage produced by the Royal Canadian Mint, make up the currency in circulation and are the means of payment in cash transactions.

While cash transactions still play an important role in the payments system, the widespread use of cheques and, in more recent years, of credit cards has meant that the role of currency has become less important. By far the largest proportion of the public's holdings of money is held in deposit balances at financial institutions, principally the chartered banks, where it may be drawn on for making payments. Three types of chequing accounts are offered by the chartered banks—current and personal chequing accounts, on which no interest is paid, and chequable savings accounts, on which interest is paid. There are also non-chequable savings accounts, on which the banks pay a higher rate of interest, and various types of term deposits. Other deposit-taking institutions, such as credit unions, caisses populaires and trust and mortgage loan companies, also offer various types of savings and term deposits, including chequable savings accounts.

Bank of Canada

The Bank of Canada is Canada's central bank and the agency directly responsible for monetary policy. The ability of the Bank of Canada to exercise a broad controlling influence over the growth of money and the level of interest rates in Canada, and thereby to affect levels of spending and economic activity, stems primarily from the control it has over the amount of cash reserves available to the banking system.

Under the Bank Act, which regulates the operations of Canada's chartered banks, each chartered bank is required to maintain cash reserves in the form of deposits with or notes of the Bank of Canada equal to a stipulated percentage of its Canadian dollar deposit liabilities. The ability of the chartered banks to incur additional deposit liabilities in order to expand their loans and investments can thus be influenced by the Bank of Canada through its control over the supply of cash reserves. A relatively generous supply of cash reserves will induce the banks to increase their investments and eventually their loans with a concomitant increase in their deposit liabilities; a more restrictive policy will have the opposite effect. Since the chartered banks are the major financial institutions in Canada, their investment and lending operations have a marked impact on the level of interest rates and the availability of funds throughout the economy generally. Various techniques are used by the Bank of Canada to alter cash reserves, but the principal means involve changes in its holdings of Government of Canada securities.

Although management of the cash reserves of the banking system is the primary policy instrument used by the Bank of Canada, various supplementary tools are also available. The bank also has the power to require the chartered banks to hold secondary reserves consisting of excess cash reserves, treasury bills and day-to-day loans to money market dealers. It is authorized to make short-term advances to chartered banks and can change the bank rate, the minimum rate at which it is prepared to make advances. Changes in the bank rate not only influence the current



One of Calgary's oldest banks, still in use today.

level of interest rates but also serve as an indication of the bank's stance on monetary policy.

In addition to its responsibility for monetary policy the Bank of Canada acts as fiscal agent for the Government of Canada. In this role it undertakes the management of the public debt for the government, operates a deposit account through which flow virtually all of the government's receipts and expenditures, handles foreign exchange transactions for the government and generally acts as an adviser on economic and financial matters.

Chartered Banks

The chartered banks are the largest deposit-taking institutions in Canada and a major source of short- to medium-term financing. They are major participants in the Canadian short-term money market and it is primarily through their response to the Bank of Canada's cash management that the influence of the central bank is transmitted to the money market and to credit markets generally. They also operate the country's cheque-clearing system. In addition to their domestic activities the chartered banks have an extensive foreign currency business and maintain offices and branches in major financial centres around the world.

At present there are 12 chartered banks operating in Canada; five of them have very extensive country-wide branch systems, while two operate principally in Quebec. The other more recently established banks operate largely in one region or specialize in wholesale banking. All banks operate under charters granted by Parliament under the terms of the Bank Act and are subject to inspection.

The chartered banks have a very wide range of dealings with all parts of the community. Bank loans are a major source of financing for businesses, farmers,

governments and consumers, and banks account for a major share of the consumer credit extended. Most loans are relatively short-term, but the banks also provide term loans to businesses and farmers and invest in residential mortgages. They also offer their customers a variety of other services, including credit cards and facilities for obtaining foreign exchange and for the safekeeping of valuables.

Other Financial Institutions

In addition to the chartered banks, a wide range of other financial institutions serves the diverse needs of the community. The growth and development of such institutions has been particularly rapid during the past two or three decades, in large

Interior of a new bank in Vancouver, BC.

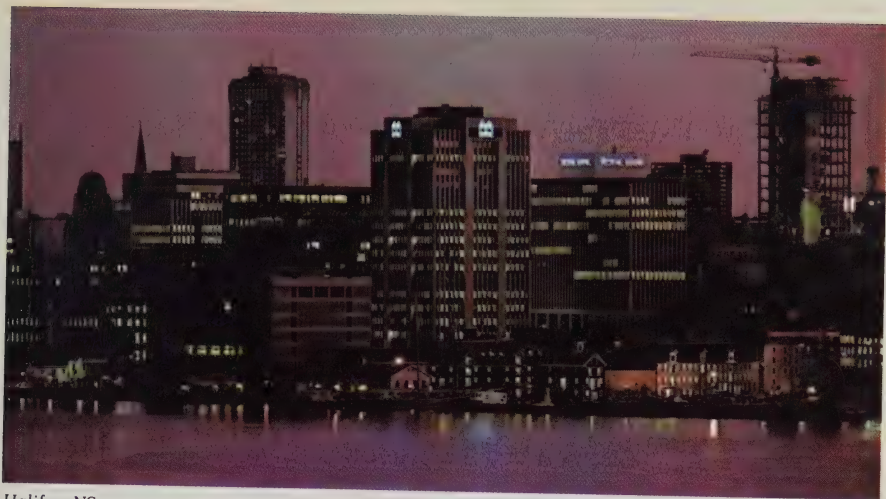


part reflecting the expansion of the Canadian economy and the increasing complexity of financial markets. While there is a degree of specialization in the different types of institutions, there is also considerable competition. Among the more important non-bank deposit-taking institutions are the trust and mortgage loan companies, the credit unions, or caisses populaires as they are called in Quebec, and the Quebec savings banks. Other major institutions include the sales finance and consumer loan companies, the life insurance companies and various types of investment companies. Stockbrokers and investment dealers also play an important role in financial markets. A number of institutions, including government agencies, specialize in medium- to longer-term financing for small businesses, farmers and exporters or in particular types of lending such as leasing.

The trust and mortgage loan companies have experienced rapid growth in recent years. There are about 100 such companies in Canada, most of which have branch networks. They compete with the chartered banks for deposits, mainly through the sale of fixed-term debentures and investment certificates, and are the largest lenders in the mortgage market, holding a major share of their assets in the form of mortgages. Trust companies also administer private and corporate pension funds and the estates of individuals, manage companies in receivership and act as

A new building erected by one of the chartered banks, Toronto, Ont.





Halifax, NS.

financial agents for municipalities and corporations. Trust and mortgage loan companies are licensed and supervised either by the federal Department of Insurance or by provincial authorities.

Credit unions and caisses populaires have grown particularly rapidly in recent years and have become an important part of the financial system. Most of them are formed on the basis of a common bond, such as employment, or organized on community lines; they differ from other financial institutions in their co-operative nature and local character. Shares are sold to members, but most of the funds come from deposits and their assets are held largely in the form of mortgages and personal loans to members. Credit unions operate under provincial legislation; nearly all belong to central credit unions operating within their respective provinces.

Insurance

At the end of 1975, Canadians owned over \$223,000 million worth of life insurance, with an average of \$32,100 in force per household. Canadians are well insured compared to people in other countries. The Canadian life insurance business consists of about 240 companies and fraternal benefit societies, over half of which are federally registered companies. The latter group of companies writes more than 90 per cent of the total business of the industry and holds assets in Canada of over \$21,000 million.

In addition to life insurance, most of the companies sell policies that cover expenses resulting from illness and compensate policyholders for wages not received during illness; such insurance may be purchased from a licensed insurance salesman or through a "group" plan operated by an employer, a professional association, a union, etc. About 330 companies sell property, automobile, liability and other casualty lines. The federally registered companies selling such insurance have assets in Canada of over \$5,000 million.



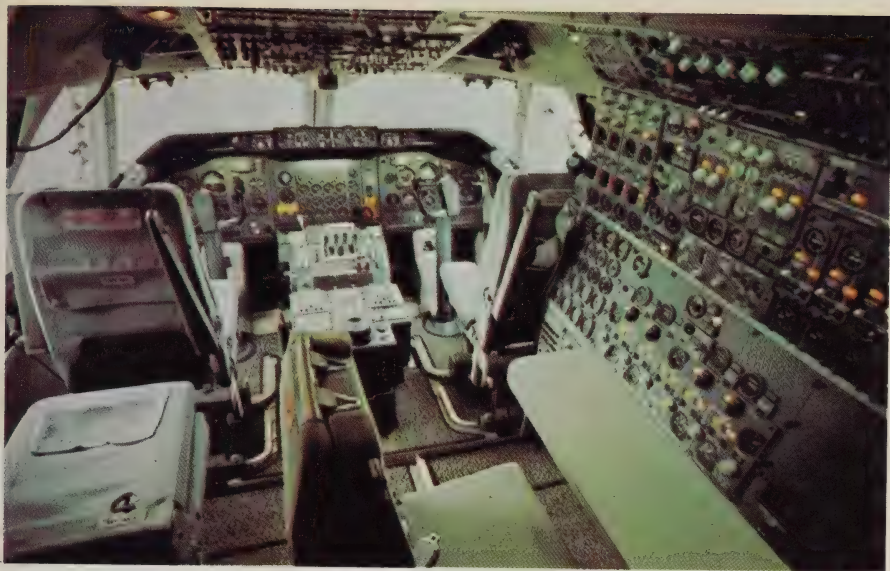
The Trans Canada Highway as it passes through the Fraser Canyon, BC.

Transportation

Throughout Canadian history, transportation has been a necessary part of social and economic life. Exploration, fur-trading, settlement, timber trade, newsprint delivery and vacation plans all depend on some mode of transport, but the dominant means have shifted over the years from canoe to train to motor vehicle and aircraft. Dramatic changes in for-hire carriage of goods have occurred in the span of two generations. While it is estimated that railways earned over 85 per cent of Canada's freight revenue in 1930, their share dropped to less than half by 1960 and to just over 30 per cent in 1974. For-hire trucks, on the other hand, accounted for 2 per cent of total freight revenue in 1930, 30 per cent in 1960 and over 40 per cent in 1974.

Air Transport

In Canada, commercial air services are licensed and regulated by the Canadian Transport Commission. Registration and inspection of aircraft, licensing of personnel, operation of a variety of airports and provision of air traffic control and other navigation facilities are some of the services provided to civil aviation by the Canadian Air Transportation Administration of the Ministry of Transport (MOT).



The cockpit of a 747 jet.

Although Canadian air carriers perform many varied services—including crop dusting, forest fire patrol, pipeline inspection and aerial survey and construction—passenger and cargo transport is the most important. In 1975 some 578 air carriers licensed to operate in Canada transported 15.7 million passengers domestically and 5.4 million on international routes. The scheduled international routes of four Canadian air carriers—Air Canada, CP Air, Pacific Western Airlines and Nordair—form a vast network connecting Canada to every continent. Canadian airlines also fly charters to destinations around the world.

Growth in civil aviation can be measured in the number of registrations for both aircraft and aviation personnel. From March 1966 to December 1976 the number of civil aircraft in Canada more than doubled, from 8,310 to 19,737. Licences in force for pilots of all types of aircraft, flight navigators, air traffic controllers and flight and maintenance engineers totalled an estimated 56,700 on December 31, 1976.

Another indication of Canadian aviation activity is the number of aircraft movements recorded at airports with MOT air traffic control towers. In 1976 the 58 major airports handled an estimated 6.4 million landings and take-offs. This represented an increase of 12 per cent over 1974, when 57 towers reported 5,692,711 movements, and of 46 per cent over 1970. The upward trend in tower-controlled air traffic over this period is attributable to substantial increases in both itinerant and local movements.

In 1975 Canadian air carriers transported 20.5 million passengers; in 1976 they carried an estimated 21.0 million, an increase of 2.4 per cent. Operating revenues earned by all air carriers in 1975 amounted to \$1,891 million, while those for 1976

approached \$2,070 million. Expenditures, reported at \$1,823 million in 1975, were estimated at \$2,040 million for 1976.

Trends in domestic travel are illustrated by scheduled air passenger origin and destination data. Figures for air journey origins and destinations of passengers between Montreal and Toronto showed an increase of 33.5 per cent between 1971 and 1973 and of 5.2 per cent between 1973 and 1975. Ottawa-Toronto passenger totals grew by 32.4 per cent between 1971 and 1973 and by 14.7 per cent between 1973 and 1975.

Table 1. Distribution of itinerant movements¹ at MOT tower-controlled airports, by type of power plant, 1973-76

	1973		1974		1975		1976 ²	
	No.	%	No.	%	No.	%	No.	%
Piston.....	1,584,255	61.2	1,465,022	57.7	1,833,301	61.1	1,845,700	60.8
Turbo-prop.....	235,825	9.1	234,495	9.2	246,825	8.3	249,200	8.2
Jet.....	661,967	25.6	734,675	28.9	781,390	26.1	787,100	25.9
Helicopter.....	99,720	3.9	100,837	4.0	127,471	4.3	150,000	5.0
Glider.....	4,858	0.2	4,512	0.2	4,412	0.2	3,200	0.1
Total.....	2,586,625	100.0	2,539,541	100.0	2,993,399	100.0	3,035,200	100.0

¹ A landing or take-off of an aircraft that is arriving from one airport or departing to another.

² Estimated.

Airplanes and boats near Moosonee, Ont.





A helicopter lifting off with supplies for a remote camp in Alberta.

Table 2. Scheduled air passenger origin and destination journeys, top 10 city pairs, 1969-75
(thousands of passengers)

City pair	1969	1970	° 1971	1972	1973	1974	1975
Montreal, Que.-							
Toronto, Ont.....	586.1	674.8	685.8	758.6	915.6	965.7	962.8
Ottawa, Ont.-							
Toronto, Ont.....	251.5	305.6	326.6	347.6	432.5	493.8	495.9
Calgary, Alta.-							
Edmonton, Alta.	212.9	234.8	254.8	275.3	332.2	372.4	412.5
Toronto, Ont.-							
Vancouver, BC.....	143.0	163.0	182.8	206.0	271.4	302.0	301.8
Calgary, Alta.-							
Vancouver, BC.....	141.9	166.0	179.4	201.9	247.6	275.1	291.3
Edmonton, Alta.-							
Vancouver, BC.....	122.0	139.3	144.7	170.1	217.3	246.7	253.8
Toronto, Ont.-							
Winnipeg, Man.....	146.3	170.9	163.1	179.2	210.5	234.2	238.3
Calgary, Alta.-							
Toronto, Ont.....	75.7	83.0	86.7	104.3	128.7	156.7	174.2
Halifax, NS-							
Toronto, Ont.....	84.2	98.7	103.1	113.5	147.3	158.6	168.4
Thunder Bay, Ont.-							
Toronto, Ont.....	70.0	84.5	96.5	96.6	119.6	140.2	143.8

Table 3. Operations, operating revenue and expenses and fuel consumption, commercial aviation, 1975 and 1976
All services (thousands)

	Transcontinental and regional air carriers ¹		All other air carriers		Total all air carriers	
	1975 [†]	1976 ²	1975 [†]	1976 ²	1975 [†]	1976 ²
Operations						
Passengers.....	17,714	18,040	2,779	2,984	20,493	21,024
Passenger-kilometres	28 368 804	29 951 783	3 150 556	2 993 028	31 519 360	32 944 811
Passenger-miles.....	17,628,040	18,611,685	1,957,718	1,859,321	19,585,758	20,471,006
Goods tonne-kilometres.....	740 976	773 208	33 059	29 753	774 035	802 961
Goods ton-miles.....	507,518	529,595	22,643	20,379	530,161	549,974
Flight departures.....	404	392	668	731	1,072	1,123
Hours flown.....	584	567	1,803	1,842	2,387	2,409
Operating revenues and expenses						
Total operating revenues (\$).....	1,540,996	1,673,368	350,311	396,867	1,891,307	2,070,235
Total operating expenses (\$).....	1,494,471	1,659,311	328,401	380,453	1,822,872	2,039,764
Fuel consumption						
Turbo fuel (litres) ...	3 098 254	3 036 289	246 407	264 124	3 344 661	3 300 413
(gallons) .	681,534	667,903	54,203	58,100	735,737	726,003
Gasoline (litres).....	3 578	2 741	80 969	77 892	84 547	80 633
(gallons) ...	787	603	17,811	17,134	18,598	17,737

¹ Air Canada, CP Air, Eastern Provincial Airways, Quebecair, Nordair, Transair and Pacific Western Airlines.

² Estimated.

[†] Revised.

Container train passing through the lowlands near College Bridge, NB.





Railway marshalling yards, Toronto, Ont.

Railways

Historically, railways have played a central role in the political integration, settlement and economic development of Canada. In 1850 there were 106 km (kilometres) of railway in all of British North America; 80 years later Canada had 91 065 km of track in operation. However, growth since then has been slow, with occasional declines; by 1975, 96 633 km of track were in use. Two continent-wide railways, Canadian National and Canadian Pacific, spanned 7 000 km from Atlantic

A single train passing through the spiral tunnel near Field, BC. The front of the train emerges from the tunnel at top while its rear sections are still approaching the entrance below.



to Pacific over vast stretches of rock and muskeg, flat prairie and mountain ranges to make possible the settlement of western Canada. Today, these railways offer multi-modal transportation services, with particular emphasis on the long-distance movement of bulk commodities and containers quickly, cheaply and efficiently.

Canadian Pacific is a private company, while Canadian National Railways is operated by the federal government. Provincially operated lines include the British Columbia Railway, British Columbia Hydro's railway, Ontario Northland and GO Transit.

Revenue freight carried decreased to 228 195 248 t (tonnes) in 1975 from the 1973 total of 246 314 822 t. The number of passengers carried also declined, to 23,570,775 in 1975, down 2.3 per cent from the 1974 total of 21,134,040. The number of employees needed to transport these people and goods totalled 127,986 in 1975, down from 131,908 in 1974 but still above the record low of 124,201 in 1973.

Motor Vehicle Transportation

In 1975 the motor vehicle continued to maintain unchallenged its position as the dominant mode of transport in Canada. Preliminary data show that registrations for all types totalled 11.1 million, up slightly from the 1974 total of 11,002,003 and 66 per cent above the 1965 figure of 6,698,778. Passenger car registrations were 8.6 million, or 77 per cent of the 1975 total; truck and bus registrations were 2.2 million, or 20 per cent. Net fuel sales levelled off in 1975, amounting to 31 830 000 000 L (litres) of gasoline, 5 per cent more than in 1974 (30 343 000 000 L). Diesel fuel sales in 1975

The world's northernmost taxi service, Alert, NWT.



were up only 4 per cent from 1974, increasing from 3 872 000 000 L to 4 038 000 000 L in net sales.

The number of motor vehicle accidents reported increased 4 per cent, from 623,765 in 1974 to 646,972 in 1975. However, the number of injuries resulting from these accidents dropped in the same period, from 229,641 to 220,926 (4 per cent), and the number of fatalities and fatal accidents decreased 3.5 per cent and 1.7 per cent respectively. The 6,075 fatalities in 1975 occurred in 5,119 separate accidents; equivalent figures for 1974 were 6,290 and 5,204 respectively.

The importance of the motor carrier industry (both freight and passenger) in Canadian transportation is best illustrated by the fact that this industry generated \$3.5 billion in operating revenue in 1974. The varying economic significance of the three mutually exclusive segments of the motor carrier industry—motor carriers (freight), intercity passenger buses and urban transit—is shown in Tables 4 and 5.

Table 4. The motor carrier industry, 1974¹

	Motor carriers— freight ¹	Intercity passenger bus	Urban transit	Total
Establishments reporting (No.)	13,186.0	68.0	82.0	13,336.0
Operating revenues (\$ millions)	2,966.2	138.3	346.9	3,451.4
Operating expenses (\$ millions)	2,739.3	124.2	424.2	3,287.7
Number of employees (thousands)	125.5	5.0	26.1	156.6
Vehicles and revenue equipment (thousands)	148.7	1.8	9.7	160.2

¹Excluding household goods movers.

²Revised figures.

Table 5. Operating revenues of the motor carrier industry, by class of carrier¹, 1974²

Class of carrier	Motor carriers— freight ²		Intercity passenger bus		Urban transit		Total	
	No.	\$'000,000	No.	\$'000,000	No.	\$'000,000	No.	\$'000,000
Class 1	130	1,365.6	15	130.7	12	305.6	157	1,801.9
Class 2	380	502.1	3	2.7	16	27.2	399	532.0
Class 3	1,382	429.2	11	2.5	29	12.3	1,422	444.0
Class 4	2,398	172.5	10	0.8	5	0.5	2,414	173.8
Class 5	3,905	100.3	18	0.2	14	0.3	3,937	100.8
Class 0 ³	4,291	396.5	11	1.4	6	1.0	5,008	398.9
Total	13,186	2,966.2	68	138.3	82	346.9	13,336	3,451.4

¹ Based on reported annual operating revenue. Class 1, \$2,000,000 and over; Class 2, \$500,000 to \$1,999,999; Class 3, \$100,000 to \$499,999; Class 4, \$25,000 to \$99,999; Class 5, under \$25,000.

² Excluding household goods movers.

³ Carriers that were added to the survey for the first time in 1974.

⁴ Revised figures.



Lion's Gate Bridge, Vancouver, BC.

Historically, the motor carrier industry has been characterized by a large number of small carriers, none of which was dominant. Possibly the most important findings of recent surveys has been that this statement no longer holds. In 1974 the 157 Class 1 carriers (those earning \$2 million or more annually) represented 52 per cent of the total operating revenue of the industry.

Transporting logs from the forests of Quebec.





The CN ferries are a major transportation link between Newfoundland and the mainland.

Water Transport

According to the results of a special profiling survey of the Canadian water transport industry, Canadian-domiciled commercial carriers and charterers generated gross transportation revenues totalling \$1.14 billion in 1974. Of this, approximately 95 per cent, or \$1.08 billion, was grossed by 89 carriers earning \$1 million or more annually from water transportation operations.

Total wage and salary expenditures on licensed and unlicensed vessel crew represented an estimated direct labour outlay of 20 per cent of total gross transportation revenue, or 20 cents out of every revenue dollar.

Of the \$1.14 billion gross transportation revenue reported the largest portion, \$549 million (48 per cent), was generated by operations between Canadian ports. Canada-United States movements accounted for \$229 million (20 per cent). Operations of Canadian-domiciled firms involving other foreign ports accounted for \$356 million (31 per cent).

International cargoes handled at Canadian ports amounted to 166 220 496 t during 1975, down 0.4 per cent from the 1974 total of 166 828 116 t. A total of 69 530 040 t, or 42 per cent of Canada's international trade, was handled at eight major ports—Halifax, NS, Saint John, NB, Quebec and Montreal, Que., Toronto, Hamilton and Thunder Bay, Ont., and Vancouver, BC.

governments and their services

Government

Canada is a federal state, established in 1867. In that year, at the request of three separate colonies (Canada, Nova Scotia and New Brunswick), the British Parliament passed the British North America (BNA) Act, which "federally united" the three "to form...one Dominion under the name of Canada". The Act merely embodied, with one modification (providing for the appointment of extra Senators to break a deadlock between the two Houses of Parliament), the decisions that delegates from the colonies, the "Fathers of Confederation", had themselves arrived at.

The Act divided the Dominion into four provinces. The pre-Confederation "province of Canada" became the provinces of Ontario and Quebec, while Nova Scotia and New Brunswick retained their former limits. In 1870 the Parliament of Canada created Manitoba; British Columbia entered the union in 1871 and Prince Edward Island in 1873. In 1905 the Parliament of Canada created Saskatchewan and Alberta and in 1949 Newfoundland joined.

The BNA Act gave Canada complete internal self-government and the country gradually acquired full control over external affairs as well. Canada is now a fully sovereign state, except that a few very important parts of the Constitution can be

changed only by Act of the British Parliament. This limitation, however, is purely nominal, as the British Parliament invariably passes any amendment requested by the Canadian; the only reason the full power of amendment has not been transferred to Canada is that Canadians have not been able to agree on an amending formula.

The BNA Act gives the Canadian Parliament power to "make laws for the peace, order and good government of Canada in relation to all matters...not...assigned exclusively to the Legislatures of the provinces". The Act added a list of examples of this general power, which includes: defence; raising money by any kind of taxation; regulation of trade and commerce; navigation and shipping; fisheries; currency and banking; bankruptcy and insolvency; interest; patents and copyrights; marriage and divorce; criminal law and criminal procedure; penitentiaries; interprovincial and international steamships, ferries, railways, canals and telegraphs; and any "works" declared by Parliament to be "for the general advantage of Canada". Amendments have added unemployment insurance and amendment of the Constitution, except in regard to the division of powers between Parliament and the provincial legislatures, the rights guaranteed to the English and French languages, the constitutional rights of certain religious denominations in education, the requirements of an annual session of Parliament and the maximum duration of Parliament.

The Act of 1867 gave Parliament and the provincial legislatures concurrent power over agriculture and immigration, with the federal law prevailing over the

The Governor General, His Excellency Jules Léger, and Madame Léger arriving at the opening of Parliament.





Trooping the colour at Government House in Ottawa.

provincial in case of conflict. Amendments have since provided for concurrent jurisdiction over pensions, but with provincial law prevailing in case of conflict.

The BNA Act also established a limited official bilingualism. In debates in both Houses of Parliament members may use either English or French, the records and journals of both Houses must be kept in both languages, Acts of Parliament must be published in both languages and either language may be used in any pleading or process in courts set up by Parliament; the same provisions were made for the legislature and courts of Quebec. In 1969 Parliament adopted the Official Languages Act, which declares that English and French enjoy equal status and are the official languages of Canada for all purposes of the Parliament and Government of Canada.

Except for limited official bilingualism and certain educational rights for some religious minorities, the Canadian Constitution provides no specific protection for basic rights like freedom of worship, of the press and of assembly. Therefore, the Parliament of Canada adopted a Bill of Rights in 1960 and the present government has proposed human rights legislation prohibiting discrimination in areas of federal jurisdiction.

Each provincial legislature has exclusive power over: the amendment of the provincial Constitution (except as regards the office of Lieutenant Governor, the legal head of the provincial executive); natural resources; direct taxation for

provincial purposes; prisons; hospitals; asylums and charities; municipal institutions; licences for provincial or municipal revenue; local works and undertakings; incorporation of provincial companies; solemnization of marriage; property and civil rights; administration of justice (including the establishment of civil and criminal courts and civil procedure); matters of a merely local or private nature; and education, subject to certain safeguards for denominational schools in Newfoundland and Protestant or Roman Catholic schools in the other provinces. Judicial decisions have given "property and civil rights" a very wide scope, including most labour legislation and much of social security.

The Canadian Constitution

The BNA Act and its amendments provide only a skeleton framework of government, which is filled out by judicial interpretation, by various Acts of Parliament and of the legislatures and, most of all, by custom or "convention".

The Sovereign's powers are exercised, as the Fathers of Confederation put it, "according to the well understood principles of the British Constitution"—that is, according to the usages and understandings that gradually transformed the British monarchy into a parliamentary democracy. Canada has inherited and elaborated on these conventions to suit our own needs.

The Government of Canada

The Executive

By free and deliberate choice of the Fathers of Confederation, Canada is a constitutional monarchy. The executive government "is vested in the Queen" of Canada, who is also Queen of Britain, Australia and New Zealand. In strict law her powers are very great. In fact they are exercised on the advice of a Cabinet responsible to the House of Commons, which is elected by the people. For most purposes the Queen is represented by the Governor General (now always a Canadian), whom she appoints on the advice of the Prime Minister.

Except in extraordinary circumstances, the Queen or the Governor General must act on the advice of her ministers. On the advice of the Prime Minister the Governor General appoints the ministers and the members of the Senate. The Prime Minister decides when Parliament shall meet and normally decides when a new Parliament shall be elected, although there must be a general election at least once every five years. The Governor General appoints judges of the superior, district and county courts, the Lieutenant Governors of the provinces, deputy ministers and other senior appointees on the advice of the ministers.

The Cabinet and the Prime Minister are part of the convention rather than the law of the Constitution. The BNA Act provides only for a "Queen's Privy Council for Canada" appointed by the Governor General to "aid and advise" him; membership in the Privy Council is for life. It consists of all Cabinet ministers, all former ministers and various distinguished individuals appointed as a mark of honour. It is an honorific body, its practical importance being that membership in it is an essential requirement for holding ministerial office.



New government offices, Hull, Que.

The Cabinet is an informal body composed of those Privy Councillors currently holding ministerial office and is presided over by the Prime Minister. In January 1977 the Cabinet had 32 members, including the Prime Minister. By convention all ministers must be Members of Parliament and it is the practice that, with the exception of the Leader of the Government in the Senate, all ministers be members of the House of Commons. It is customary, insofar as representation in Parliament permits, for the Cabinet to include at least one minister from every province, with the more populous provinces receiving greater representation.

The members of the Cabinet must speak as one on all questions of government policy; a minister who cannot support that policy must resign. Each minister of a department is answerable to the House of Commons for that department and the Cabinet as a whole is answerable to the House for government policy and administration generally.

If the government is defeated in the House on a motion of want of confidence, it must either resign office, at which point the Governor General calls on the Leader of the Opposition to form a new government, or seek dissolution of Parliament, which leads to a general election; the latter procedure is generally followed nowadays. Defeat of a major government bill is ordinarily considered a vote of want of confidence, leading to the same consequences, but the government can choose to consider any such defeat not decisive. The House then has the option of voting on a motion of want of confidence.

Only the government can introduce bills for the raising or spending of public money. Ordinary members of the House of Commons can move to reduce proposed taxes or expenditures, but not to raise them. The rules of the House allot most of its time to government business and nearly all legislation now comes from the

government. The Cabinet has the sole power to move closure, cutting off debate, and if the other parties fail to agree the Cabinet can move to fix a timetable for the various stages of a bill. But the rules are careful also to provide abundant opportunity for the Opposition to question, criticize and attack. Twenty-five days of each parliamentary year are specifically allotted to the Opposition to debate any subject it pleases and on six of those days it can move want of confidence.

The Legislature

Parliament. Parliament consists of the Queen, the Senate and the House of Commons. The Senate has 104 seats, appointed by the Governor General on the advice of the Prime Minister, with the following distribution: 24 from Ontario, 24 from Quebec, 24 from the Maritime provinces (10 each from Nova Scotia and New Brunswick and 4 from Prince Edward Island), 24 from the western provinces (6 each), 6 from Newfoundland, one from the Yukon Territory and one from the Northwest Territories. Senators retire at age 75.

The BNA Act gives the Senate exactly the same powers as the House of Commons, except that money bills must originate in the Commons. The Senate can reject any bill, but rarely does. It does most of the work on private bills (such as incorporation of companies) and, like the House of Commons, subjects general legislation to careful scrutiny in committee; it makes particular use of special ad hoc committees to examine questions of major public importance. In January 1977 the Senate had 70 Liberals, 1 Independent Liberal, 15 Progressive Conservatives, 1 Social Credit, 2 Independents and 15 vacancies.

The House of Commons has 264 seats: 7 from Newfoundland, 11 from Nova Scotia, 10 from New Brunswick, 4 from Prince Edward Island, 74 from Quebec, 88 from Ontario, 13 each from Manitoba and Saskatchewan, 19 from Alberta, 23 from British Columbia and 1 each from the Yukon Territory and the Northwest Territories. Members are elected by single-member constituencies, broadly speaking in proportion to the population of each province, but no province can have fewer members in the House of Commons than in the Senate. The total number of members is redistributed after each decennial census. Any adult Canadian citizen (with some exceptions, such as people in jail) can vote. In January 1977 the Liberals had 135 members, the Progressive Conservatives 96, the New Democratic Party 16 and the Social Credit Party of Canada 10; there was 1 Independent member and 6 seats were vacant.

In each House, all draft bills pass through three stages known as "readings". The first, at which time the bill is tabled, is purely formal. On the second, the House gives the bill consideration in principle and, if satisfied, refers it to a committee, where it is dealt with clause by clause. Supply and budget bills and such others as the House thinks fit are referred to the Committee of the Whole, which is the whole House sitting under special rules facilitating detailed discussion. All other bills are sent to one of the 19 "Standing Committees" (12 to 30 members each), each of which specializes in a certain subject or subjects. The appropriate committee then reports the bill to the House, with or without amendments, and at this stage any member may propose amendments, which are debatable. Then comes a third reading. If the

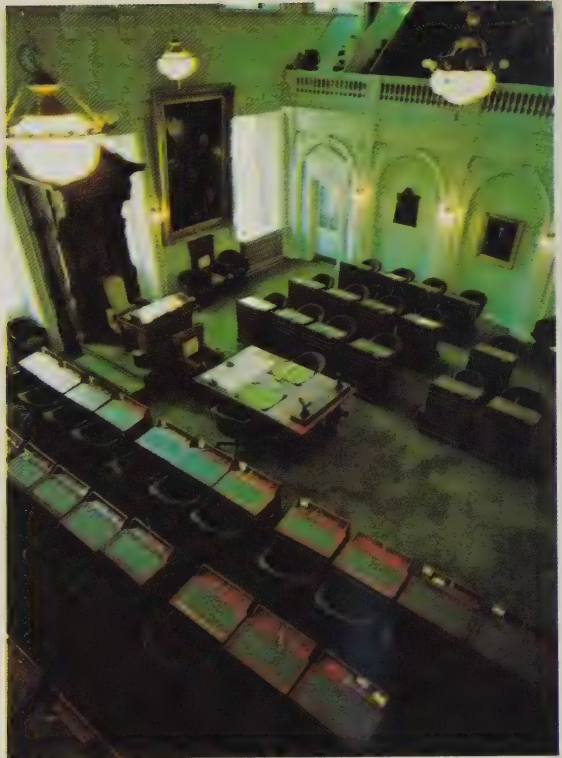


The British Columbia Legislature in Victoria.

bill passes this it is sent to the Senate, where it goes through much the same procedure, following which it receives Royal Assent and thereby completes the process by which legislation is enacted by the Crown in Parliament.

The Canadian Constitution would be unworkable without political parties. Yet parties are almost unknown to Canadian law—a notable example of the convention of the Constitution. The parties make possible a stable government, capable of carrying its policies into effect. They provide continuous organized criticism of that government. They make possible an orderly transfer of power from one government to another. They help to educate the electorate on public affairs and reconcile divergent elements and interests from different parts of the country.

The Liberal Party has its roots in the pre-Confederation Reform parties that struggled for the establishment of parliamentary responsible government in the 1840s. The Progressive Conservative Party goes back to a coalition of moderate Conservatives and moderate Reformers in the province of Canada in 1854, six years



The Nova Scotia Legislature in Halifax.

after responsible government had been won. It was broadened into a national party in 1867 when Sir John A. Macdonald, the first national Prime Minister, formed a Cabinet of eight Conservatives and five Liberals or Reformers, whose followers soon came to be known as "Liberal-Conservatives"; the present name was adopted in 1942. The New Democratic Party dates from 1961 when the major trade union federation (the Canadian Labour Congress) and the Co-operative Commonwealth Federation (CCF) joined forces to launch a new party; the CCF had been founded in 1932 by a group of farmer and labour parties in the western provinces. The Social Credit Party is based on the monetary theories of Major Clifford Douglas; in 1976 all its members in the House of Commons were from Quebec.

Provincial and Territorial Government

In each province the machinery of government is substantially the same as that of the central government, except that no province has an upper house.

All of northern Canada west of Hudson Bay and many islands northeast of Hudson Bay constitute two territories, the Yukon Territory and the Northwest Territories, which come directly under the Government and Parliament of Canada but enjoy a growing degree of self-government.

The Yukon Territory is administered by a commissioner, appointed by the Government of Canada, and an elected Council of 12. The Commissioner in Council can pass laws dealing with direct taxation for local purposes, establishment of territorial offices, sale of liquor, preservation of game, municipal institutions, licences, incorporation of local companies, property and civil rights, solemnization of marriage and matters of a local and private nature.

The Northwest Territories is administered by a commissioner, appointed by the Government of Canada, and an elected council of 15. The Commissioner in Council has substantially the same powers as in the Yukon Territory.

Municipal Government

Municipal government, being a matter of provincial jurisdiction, varies considerably. All municipalities (cities, towns, villages and rural municipalities) are governed by elected councils. In Ontario and Quebec there are also counties, which group smaller municipal units for certain purposes, and both these provinces have begun to set up regional municipalities for metropolitan areas.

In general, the municipalities are responsible for police and fire protection, local jails, roads and hospitals, water supply and sanitation, and schools (often administered by distinct boards elected for the purpose). They get their revenues mainly from taxes on real estate, fees for permits and licences and grants from the provinces. The total number of municipalities is now about 4,500.

City Hall, Calgary, Alta.



The Legal System

The legal system is an important element in Canadian government. Since the British North America (BNA) Act established Canada as a federal state, the Canadian legal system is somewhat complex.

The Law and Law-making

The law in Canada consists of statutes and judicial decisions. Statutes are enacted by Parliament and the provincial legislatures and are written statements of legal rules in fairly precise and detailed form.

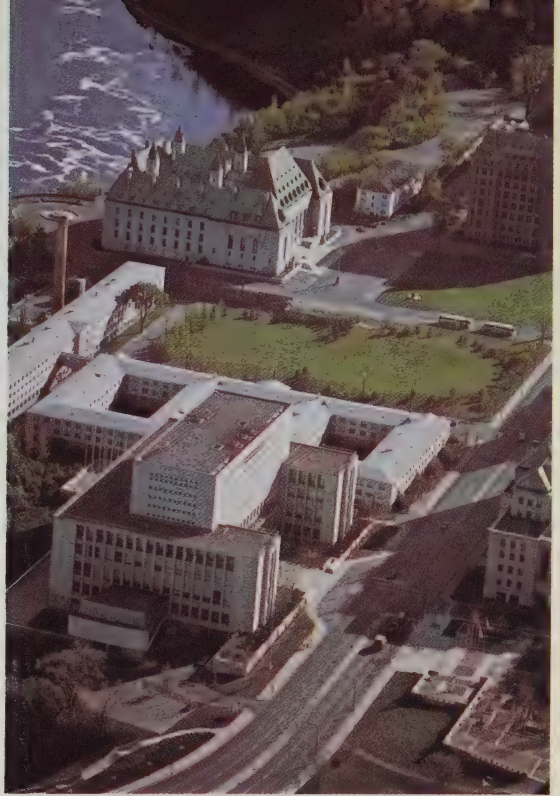
There is also a large body of case law that comes mainly from English common law and consists of legal principles evolved by the decisions of the superior courts over a period of centuries. The English common law came to Canada with the early English settlers and is the basis of much of the federal, provincial and territorial law. The province of Quebec, however, was originally settled by French inhabitants who brought with them civil law derived from French sources. Thus civil law principles govern such matters as personal, family and property relations in Quebec; the province has developed its own Civil Code and Code of Civil Procedure governing these and other matters and has, in effect, adapted the French civil law to meet Quebec's needs.

In addition to the statutes of the federal Parliament and provincial legislatures, there is a vast body of law contained in regulations adopted by appropriate authorities and in by-laws made by municipalities. This subordinate legislation, as it is called, is issued under authority conferred by either Parliament or the provincial legislatures.

Statutes enacted by the federal Parliament apply throughout the country; those enacted by provincial legislatures apply only within the territorial limits of the provinces. Hence, variations may exist from province to province in the legal rules regulating an activity governed by provincial law.

The main body of Canadian criminal law, being federal, is uniform throughout the country. Although Parliament has exclusive authority under the BNA Act to enact criminal law, the provincial legislatures have the power to impose fines or punishments for breaches of provincial laws. This gives rise to provincial offences—for example, the infraction of a provincial statute regulating the speed of automobiles travelling on the highways.

Most Canadian criminal law is contained in the criminal code, which is derived almost exclusively from English sources. Criminal offences are classified under the code as indictable offences, which are subject to a severe sentence, or summary conviction offences, to which a less severe sentence applies. However, the totality of statutory federal criminal law is not contained in the Criminal Code of Canada. Other federal statutes provide for the punishment of offences committed thereunder by fine or imprisonment or both. In any event, whether an offence be serious or minor, it is a fundamental principle of Canadian criminal law that no person may be convicted unless it has been proved beyond all reasonable doubt to the satisfaction of either a judge or a jury that he is guilty of the offence.



The Supreme Court of Canada, with the National Library and Public Archives building in the foreground.

Law Reform

As society changes, as its needs and even its standards change, the law has to reflect these changes. Therefore, many of the provinces now have law reform commissions that inquire into matters relating to law reform and make recommendations for this purpose. At the federal level, the Law Reform Commission of Canada carries out this activity by studying and reviewing federal law with a view to making recommendations for its reform.

The Courts and the Judiciary

The legal system includes courts, which play a key role in the process of government. Acting through an independent judiciary, the courts declare what the law is and apply it to resolve conflicting claims between individuals, between individuals and the state and between the constituent parts of the Canadian federation.

The Judiciary

Because of the special function performed by judges in Canada the BNA Act guarantees the independence of the judiciary of superior courts. This means that judges are not answerable to Parliament or to the executive branch of the government for decisions rendered. A federally appointed judge holds office during good behaviour but is removable from office by the Governor in Council on the

address of the Senate and House of Commons; in any event, he or she ceases to hold office upon attaining the age of 75 years. The tenure of judges appointed by provinces to inferior courts is determined by the applicable provincial laws. No judge, whether federally or provincially appointed, may be subjected to legal proceedings for any acts done or words spoken in a judicial capacity in a court of justice.

The appointment and payment of judges reflect the interlocking of the divided powers found in the Canadian constitutional system. The federal government appoints and pays all judges of the federal, provincial superior and county courts, while judges of provincial inferior courts are appointed and paid by the provincial governments.

The Courts

In Canada, the power to create courts is divided. Some courts are created by Parliament (for example, the Supreme Court of Canada) and others by provincial legislatures (for example, superior courts, county courts and many lesser provincial courts). However, the Supreme Court of Canada and the provincial courts are part of an integrated whole; thus, appeals may be made from the highest courts of the provinces to the Supreme Court. Generally speaking, federal and provincial courts are not necessarily given separate mandates as to the laws that they administer. For instance, although criminal law is made by the Parliament of Canada, it is administered mainly in provincial courts.

Federal courts. Federal courts in Canada include the Supreme Court of Canada, the Federal Court of Canada and various specialized tribunals such as the Tax Review Board, the Court Martial Appeal Court and the Immigration Appeal Board. These courts and tribunals are created by Parliament.

The Supreme Court, established in 1875, is the highest appeal court of Canada in civil and criminal matters. It consists of nine judges, of whom three at least must come from Quebec, a requirement added because of the special character of Quebec civil law. The conditions under which it hears appeals are determined by the statute law of Parliament. The Supreme Court entertains appeals from the provincial courts of appeal and from the Federal Court. It also gives advisory opinions to the federal government when asked under a special reference procedure. Five judges normally sit together to hear a case, although on important matters it is customary for all judges of the court to sit.

The Federal Court of Canada was created in its present form in 1970; its predecessor, the Exchequer Court of Canada, was originally created in 1875. This court deals with: taxation cases; claims involving the federal government (for instance, claims against the federal government for damage caused by its employees); cases involving trademarks, copyrights and patents; admiralty law cases; and aeronautics cases. It has two divisions, a Trial Division and an Appeal Division; the Appeal Division hears appeals from decisions rendered by the Trial Division and by many federal boards and agencies.

Provincial courts. Provincial courts are established by provincial legislation and thus their names vary from province to province; nevertheless, their structures are roughly the same.



1.



2.

Royal Canadian Mounted Police

1. The Canadian Police College in Ottawa.
2. The Tactical Troop undergoing riot control training.
3. Escorting the Governor General to the opening of Parliament.

3.



Provincial courts exist at three levels. Each province has inferior courts, such as family courts, juvenile courts, magistrates' courts and small debts courts; these deal with minor civil and criminal matters and the great majority of cases originate and are decided in them. With the exception of the province of Quebec all provinces also have systems of county or district courts. These courts have intermediate jurisdiction and decide cases involving claims beyond the jurisdiction of the small debts courts, although they do not have unlimited monetary jurisdiction; they also hear criminal cases, except those of the most serious type. In addition to being trial courts, county and district courts have a limited jurisdiction to hear appeals from decisions of magistrates' courts. The highest courts in a province are its superior courts, which hear civil cases involving large sums of money and criminal cases involving serious offences. Superior courts have both trial and appeal levels; the appeal courts, with some exceptions, hear appeals from all the trial courts in the province and may also be called upon to give opinions on matters put to them under a special reference procedure by their respective provincial governments.

The Legal Profession

In common law jurisdictions in Canada, practising lawyers are both called as barristers and admitted as solicitors. In Quebec the legal profession is divided into the separate branches of advocate and notary. In all cases admission to practice is a provincial matter.

Legal Aid

In recent years all provincial governments have established publicly funded legal aid programs to assist persons of limited means in obtaining legal assistance in a number of civil and criminal matters, either at no cost or at a modest cost, depending on the individual's financial circumstances. These programs vary from province to province. Some are set up by legislative enactment, while others exist and operate by way of informal agreements between the provincial government and the provincial law society. Some provide fairly comprehensive coverage in both civil and criminal matters, while others encompass only criminal offences. In some cases federal funds are made available for development or expansion of the programs. The purpose of all such programs is to ensure that everyone gets adequate legal representation regardless of his or her financial circumstances.

The Police

The BNA Act assigns to the provinces the responsibility for judicial administration within their boundaries, but police forces have nevertheless been created by federal, provincial and municipal governments. Where municipal police forces exist it is their responsibility to provide general police services in that area. A municipality that has not created its own police force uses either the federal or the provincial police force.

Ontario and Quebec have created provincial forces that police areas of the province not served by municipal forces. Provincial police duties include providing



police and traffic control over provincial highways, assisting municipal police in the investigation of serious crimes and providing a central information service about such matters as stolen and recovered property, fingerprints and criminal records.

The federal government maintains the Royal Canadian Mounted Police (RCMP). This civil force was originally created in 1873 under the name North-West Mounted Police. One of its early duties was to maintain public order in the sparsely settled Northwest Territories, which had previously been known as Rupert's Land; today the RCMP is the sole police force in the Yukon Territory and the Northwest Territories. Eight provinces also employ the RCMP to carry out provincial policing responsibilities within their borders.

The RCMP enforces many federal statutes, with the greatest emphasis on the criminal code and the Narcotics Control Act. Force members are responsible for Canada's internal security, including the protection of government property and the safekeeping of visiting dignitaries, and the force also represents Canada in the International Criminal Police Organization (Interpol), which Canada joined in 1949.

The RCMP maintains and operates the National Police Services, which include: seven Crime Detection Laboratories strategically located across Canada; an identification service ranging from a computerized fingerprint retrieval system in Ottawa to Canada-wide field identification sections; the Canadian Police Information Centre (CPIC), which responds instantaneously to nation-wide police-oriented requests; and the Canadian Police College in Ottawa, which provides advanced training courses to members of Canadian police forces and to a limited number of foreign authorities.

The RCMP is under the direction of a commissioner and on March 31, 1977, had an establishment of 18,091.

Ministry of the Solicitor General

The Ministry of the Solicitor General was established by Parliament in 1966 and given responsibility for the Royal Canadian Mounted Police, the Canadian Penitentiary Service and the National Parole Board, agencies that had formerly been under the Department of Justice.

A prime aim of the reorganization was the co-ordination of national programs for policing, penitentiaries and parole within the Canadian criminal justice system. The

ministry plays a vital role in the maintenance of law, order and the country's internal security and has responsibility for offenders sentenced to two years or more in federal penitentiaries and for all inmates released on national parole.

The development and co-ordination of ministry policy is the responsibility of a secretariat that reports to the Deputy Solicitor General. The secretariat has branches responsible for policy planning and program evaluation, police and security planning and analysis, research and systems development, and communication and consultation.

Canadian Penitentiary Service

The Canadian Penitentiary Service operates under the Penitentiary Act and is under the jurisdiction of the Solicitor General of Canada, with headquarters in Ottawa. It is responsible for all federal penitentiaries and for the care and training of persons committed to those institutions. The Commissioner of Penitentiaries, under the direction of the Solicitor General, is responsible for control and management of the service and for related matters.

As of March 31, 1976, the federal penitentiary system controlled 53 institutions: 14 maximum security, 13 medium security and 24 minimum security. Total inmate population was 8,994, of whom 121 were female offenders. New, smaller institutions are being designed to provide more rehabilitation facilities for inmates, with indoor and outdoor recreation, and plans to phase out old institutions are being worked out.

The National Parole Board

Parole granted by the National Parole Board is a conditional release of an inmate serving a sentence in a prison under federal law; the selection is made when the inmate is eligible and ready. The conditional release is designed to offer protection to the community and there are specific obligations placed on the parolee. At the same time the release provides an opportunity for the inmate to become re-integrated into society.

The board has 19 members, nine in the Ottawa division and two in each of five regions across Canada; the regional offices are located in Moncton, Montreal, Kingston, Saskatoon and Vancouver. Members are appointed by the Governor General in Council, nine for a maximum of ten years and the other ten for a maximum of five years. All may be re-appointed.

The board has exclusive jurisdiction and absolute discretion to grant, refuse or revoke parole. In the cases of murderers the board makes recommendation to Cabinet, which must approve of any such release.

The National Parole Service. In preparation for the planned integration of the Canadian Penitentiary Service and the National Parole Service, the Executive Director of the National Parole Service has been placed in a direct reporting relationship to the Commissioner of Penitentiaries and no longer reports to the Chairman of the National Parole Board for operational and administrative purposes. Arrangements were finalized for the integration of the administrative machinery of the two services, with the penitentiary service assuming responsibility for provision of administrative service.

Citizenship

Acquisition of Citizenship

In 1947 Canada became the first country in the Commonwealth to adopt a distinct national citizenship. A new Citizenship Act was proclaimed in Parliament on February 15, 1977, with the intention, among others, of eliminating distinctions among applicants based on age, sex, marital status or country of previous citizenship.

The Citizenship Sector of the Department of the Secretary of State provides facilities for the acquisition and proof of citizenship. To qualify for citizenship an adult alien (18 years of age or older) must have been admitted to Canada for permanent residence and have accumulated three years of residence in Canada within the four years immediately preceding application. Applicants for citizenship must also be able to speak either of the official languages, English or French, have a knowledge of Canada and of the responsibilities and privileges of citizenship and take the Oath of Citizenship. To become a Canadian citizen a person must apply for citizenship, appear before a Citizenship Judge for a hearing and attend a court ceremony to take the Oath of Citizenship. Requests for detailed information should be made to the nearest Citizenship Court or mailed to the Registrar of Canadian Citizenship, Department of the Secretary of State, Ottawa.

Citizenship Development

The Citizenship Sector administers a variety of programs that support participation in voluntary organizations and increase understanding among groups. Special emphasis is placed on increasing the understanding and enjoyment of fundamental human rights and reducing prejudice and discrimination related to sex, race or ethnic background.

The Women's Program encourages and supports activities designed to help women acquire the knowledge and skills necessary for full and effective participation as equal citizens. It also carries out community education activities to promote greater understanding within the larger community and to encourage responsible and positive action by special influence groups to improve the status of women.

The Native Citizens' Program helps native people define and achieve their place in Canadian society by providing them with the resources to identify their needs and actively pursue their own development as Canadians. The program offers advice and technical and financial assistance to: friendship centres operated by native groups in many cities across Canada, which help native people from reserves and isolated areas to adjust to city life; communications societies, which support the development and effective use of the media by native people; and native groups working toward the recognition of basic human rights and improved lifestyles for their people.

The Multiculturalism Program encourages Canada's many different ethnic minority groups to maintain and develop their cultural heritage, to share it with

others for greater inter-group understanding and to achieve full participation in Canadian society as a whole.

The Citizens' Participation Program helps all citizens, through technical and financial assistance to their voluntary organizations, to participate in those decisions that affect the quality of their community life. The program endeavours to increase the understanding and acceptance of fundamental economic, social, cultural, civil and political rights; special emphasis is given to reducing inter-group tensions caused by prejudice and discrimination related to racial or ethnic background. The program also works with voluntary and other private organizations and with all levels of government and assists the human rights efforts of such international bodies as the United Nations.

A special citizenship ceremony in Vancouver, BC.



Manpower and Immigration

Immigration

Canada's non-discriminatory and universally applied immigration policy, administered through the Immigration Act and Regulations, is based on principles of family reunification, humanitarianism and non-discrimination. Selection of those immigrants likely to adapt to the Canadian way of life and contribute to Canada's well-being and development is emphasized.

Since World War II Canada has admitted more than 4.27 million immigrants, primarily from Great Britain, the United States, Portugal, Italy, the Federal Republic of Germany and the Netherlands. The peak years for immigration since World War II were 1957, when 282,164 persons were admitted, and 1967, when 222,876 settled in Canada. During the fiscal year 1975-76 Canada received 176,792 immigrants, a decrease of 39,819 (18.4 per cent) from the previous fiscal year. Britain was the major source country (31,102), followed by the United States (19,469), China, including Hong Kong (12,225) and India (9,589). Of the immigrants admitted to Canada in the year 1975-76, 75,423 joined the labour force, compared with 102,385 in 1974-75.

Ontario continued to attract the greatest number of immigrants (90,247); Quebec was second (28,204) and British Columbia was third (27,158). In the fiscal year 1975-76 approximately 75 per cent of the immigrants were under 35 years of age.

Anyone may apply to come to Canada. Applicants in every area of the world are judged by the same standards through a points system. All applicants except those who are sponsored as Canadian citizens or landed immigrants by a close relative living in Canada are assessed under this system. There are three categories of immigrants to Canada: independent applicants, nominated relatives and sponsored dependents.

An independent applicant is anyone who applies on his or her own to come to Canada, and is assessed on the bases of education and training, personal qualities, occupational skill, age, knowledge of French or English and the existence of relatives in Canada. Pre-arranged employment and the demand for an applicant's occupational skills in the area he or she has chosen as a destination are also considered. Points are awarded for the applicant's qualifications in each category and he or she must attain 50 points for admission to Canada.

Nominated relatives are sons and daughters who are married and under 21 or unmarried and over 21, brothers, sisters, parents or grandparents under age 60, nephews, nieces, uncles, aunts and grandchildren, but not cousins. Nominated relatives are assessed on education and training, personal qualities, occupational demand, occupational skill, age and relationship to nominator; they must also attain 50 points for admission to Canada.

Sponsored dependents include spouses, unmarried children under 21, fiancés or fiancées and parents or grandparents aged 60 or over; the Canadian resident assumes full responsibility for their care, accommodation and maintenance. Sponsored dependents are admitted to Canada provided they are in good health and of good character.



Over the years immigrants have created distinctive neighbourhoods in many cities, such as this section of Vancouver.

The Employment Visa Regulations are intended to help employers who need temporary workers. If there is no Canadian citizen or landed immigrant available for a vacant job, a non-immigrant with an employment visa may be hired; the employment visa authorizes specific employment for a given period up to a maximum of 12 months. A non-immigrant worker cannot apply from within Canada to have his or her status changed to that of permanent resident; application must be made from his or her own country. When a job is of a permanent nature a visa may be issued until such time as a Canadian can be trained or a qualified immigrant recruited for the job.

Non-immigrants visiting Canada for longer than three months are required to register at ports of entry or inland Canada Immigration Centres. Visitors cannot apply for landed immigrant status from within Canada.

A revised Immigration Bill was introduced in Parliament in November 1976. The bill affirms such fundamental objectives of Canadian immigration law as family reunification, non-discrimination, concern for refugees and the promotion of Canada's economic, social, demographic and cultural goals. The bill also requires the Minister of Manpower and Immigration to announce annually, after consultation with the provinces and other interested agencies, the immigration level that should prevail during a given period of time.

Manpower

The Department of Manpower and Immigration, with more than 3,000 counsellors in 450 Canada Manpower Centres across the country, offers employment services to both workers and employers.

As a result of counselling and discussion of job opportunities, a worker may be placed in employment, referred to training courses or assisted in moving to employment in another part of the country. Employers may receive up-to-date labour market information, advice regarding training programs and information on worker availability. The department also helps employers meet their staff needs by recruiting qualified personnel from other parts of Canada through the mobility program or from other countries through the immigration program.

Canada Manpower Centres are co-ordinated by 11 regions of the Canada Employment and Immigration Commission, which was created by the integration of the Unemployment Insurance Commission and the Department of Manpower and Immigration. Ten of the regions are organized along provincial lines and the department's Foreign Service constitutes the eleventh region.

Services for Employers

The department's services help employers obtain, train and utilize qualified employees effectively. The Canada Manpower Consultative Service (CMCS) assists plants and industries affected by large-scale modernization or economic and technological change to cope with resulting adjustment problems and develop constructive solutions. Management and labour are encouraged to work together. The Canada Manpower Adjustment Program administered by the CMCS acts as a catalyst in co-ordinating employers and workers to discuss changes and formulate problem-solving measures.

During the 1975-76 fiscal year Canada Manpower counsellors made 331,332 visits to employers to familiarize themselves with industrial operations, personnel directors, plant superintendents and supervisors.

Under the Canada Manpower Mobility Incentive Agreements the department pays up to 50 per cent of employers' costs of moving displaced employees to branch plants or to employment arranged by the employer at another location in Canada.

The Canada Manpower Industrial Training Program encourages employers to: establish new training programs or improve existing ones; expand employment opportunities for unemployed workers and those with special needs who have difficulty securing and holding jobs; alleviate persistent skill shortages; prevent lay-offs resulting from technological or economic changes; and support industrial development strategies in various regions of the country. Employers are reimbursed for direct training costs and a proportion of their wage costs under the program.

In co-operation with the provinces the department launched the three-year developmental phase of a Community Employment Strategy (CES), moving from intergovernmental discussion and organizational development in communities to concrete activities for employing people who depend on transfer payments. The goals of CES are: to make better use of existing resources before incurring new employment-related expenditures; to establish a co-operative approach by governments and communities to resolve persistent problems of long-term unemployment;

and to help those who experience persistent and particular difficulty in finding and keeping permanent employment, such as the physically, mentally or socially handicapped.

Services for Employees

The Canada Manpower Training Program (CMTP) is designed for workers who need training to increase their earning capacity and job opportunities. It benefits employers by providing better access to qualified workers and assisting them to expand their own training capabilities. To be eligible, persons must be at least one year past the school-leaving age of the province in which they live and must have been out of school one year. A landed immigrant can also apply for training under the program, including instruction in English or French if it is necessary for employment. Persons who qualify for training and have been referred by a Manpower counsellor are provided with living allowances. In 1974-75 the department spent a total of \$401 million under CMTP institutional and industrial programs, which provided training for approximately 292,000 adults.

The Canada Manpower Mobility Program provides grants for workers whose skills are not needed in their home area, enabling them to take suitable jobs or training in other parts of the country. All adult residents of Canada who are unemployed, are about to be unemployed or are under-employed and who have little or no prospect of finding suitable work in their own localities may qualify for mobility assistance.

During the past few years the department has funded special job creation programs to alleviate seasonal unemployment. The Local Initiatives Program (LIP) invites Canadians to initiate and establish job-creating projects of benefit to the community. Through the Local Employment Assistance Program (LEAP) the department provides funds and technical support to job-creation projects for persons unlikely to gain employment through normal labour market activity. Such persons acquire vocational skills and become involved in the development, management and evaluation of new work experiences.

The Outreach Program develops and extends Canada Manpower Centre services and programs to persons who do not have access to them or whose needs extend beyond normal services. Storefront offices have been established in isolated areas. In the case of co-operative arrangements with private groups and organizations that provide community employment services, special assistance may include financial support or assistance from field officers.

Comprehensive Job Creation

In October 1976 the government announced a five-year Employment Strategy, which became operative April 1, 1977. Its components include Canada Works, Young Canada Works, Summer Job Corps, the Student Summer Employment and Activities Program, Youth Employment and Employability Measures, Canada Manpower Centres for Students, Co-Operative Education, Job Experience Training, Preventive Employment Measures, Local Employment Assistance Program and the Canada Manpower Consultative Service. Detailed information on these programs may be obtained from the Canada Department of Manpower and Immigration.



Railway construction camp, Takla Lake, BC.

Labour

The Acts administered by Labour Canada generally cover employment upon or in connection with any work, undertaking or business that is within the legislative authority of the Parliament of Canada; this coverage relates to mediation and conciliation, fair employment practices, labour standards, employment safety and labour relations.

The Minister of Labour is responsible for the Canada Labour Code, the Conciliation and Labour Act, the Department of Labour Act, the Fair Wages and Hours of Labour Act, the Government Employees' Compensation Act, the Canada Labour Relations Board, the Merchant Seamen's Compensation Act and the Merchant Seamen's Compensation Board. The minister also reports to Parliament on multiculturalism.

Labour Canada has an overall objective to promote and protect the rights of parties involved in the world of work, a working environment conducive to physical and social well-being and a fair return for efforts in the workplace. The department is also charged with ensuring equitable access to employment opportunities.

Under the Canada Labour Code the minister is also responsible for granting consent to refer certain complaints of unfair labour practices to the Canada Labour Relations Board and for granting consent to complainants to institute prosecution in the courts.

Labour Canada operates offices in Moncton, Montreal, Toronto, Winnipeg and Vancouver. These offices are guided by regional directors who develop and take major responsibility for implementing the range of departmental policies and programs in the field.

Several major programs and services are aimed at meeting these objectives.

Co-ordinating Groups

Policy Co-ordination and International and Provincial Relations are the two major co-ordinating groups in Labour Canada.

The Policy Co-ordination Group acts as a sensor system, identifying public concerns in economic and social policy and channelling this information to the appropriate group; it examines issues that have broader meaning for the department than do current programs and formulates policy options for consideration by the department's senior management.

International and Provincial Relations organizes the department's participation in international and federal-provincial bodies by liaising with provincial govern-

Packaging frozen pre-cooked fish, Lunenburg, NS.





Steel worker, Vancouver, BC.

ments and international agencies; it also represents the department and Canada in labour affairs at the international level and maintains labour counsellors in Brussels, London and Washington.

Research and Program Development

Labour Data. The Labour Data Branch collects, processes and distributes research data through the planning, design implementation and evaluation of surveys examining wages and salaries, working conditions, collective agreements, work stoppages and labour organizations.

Central Analytical Services. This branch analyzes labour developments, providing information and reports that contribute to departmental and government policies concerning collective bargaining and labour affairs. It is composed of two directorates, both of which work closely with other branches in the department. The Library and Information Services Directorate provides published and unpublished material for the use of the department, other government departments and the general public; the library has a collection numbering more than 100,000 volumes covering economic and social aspects of industrial relations and also provides a research service into labour laws and related administrative practices in all jurisdictions in Canada. The Economic Analysis Directorate undertakes a variety of studies dealing generally with wage and non-wage compensation issues and general economic conditions; it also provides analysis for the Collective Bargaining Information Centre.



Loading PEI potatoes for market.

Rights in Employment. This branch creates new programs and policies to ensure that all individuals have fair and equal opportunities to obtain employment, gain promotions and receive just and impartial treatment on the job.

Conditions of Work. The Conditions of Work Branch develops programs and policies for achieving economic conditions that are fair to both employer and employee. These conditions include wages and salaries, pensions, insurance and hours of work. It also researches the relationship of compensation and working conditions to turnover rates and absenteeism.

Occupational Safety and Health. This branch develops policies and programs to promote safe and healthy working conditions and practices. It examines such issues as the effects on safety and health of dangerous substances, excessive noise and materials handling. It is involved in the administration of employment injury benefits for employees under federal jurisdiction and for seamen not covered by other compensatory legislation.

Employment Relations. This branch conducts research, designs programs and evaluates departmental policies relating to labour-management services. It also develops policies and programs directed toward the development and growth of constructive labour-management relations. Co-determination and industrial democracy come within its scope.

Federal Mediation and Conciliation Service

This service provides conciliation, mediation and arbitration services for industries under the Canada Labour Code through research, implementation of conciliation, mediation, arbitration services and program evaluation. Besides researching for conciliation, mediation and arbitration, it participates in the development and evaluation of departmental policies regarding industrial relations.

Industry, Trade and Commerce

The Department of Industry, Trade and Commerce seeks to promote the growth of the Canadian economy by stimulating the establishment, growth and efficiency of industry, the development of export trade and external trade policies, the expansion of tourism and the travel industry and the marketing of grains and oilseeds. To carry out its programs and meet its objectives, the department requires the services of a staff of more than 2,500, with offices in Ottawa, 11 regional offices across Canada and 89 posts in 64 other countries.

Industry Development

Through its many incentive and development programs, the department offers assistance, with expert advice and information and in many cases financial help, to the Canadian businessman. The objectives of the department's programs are: to develop an efficient manufacturing and secondary processing industry to meet competition at home and abroad; to increase the domestic processing of natural resources; and to provide for a greater domestic control of the Canadian economy and ensure its future development by Canadians. The department also seeks to achieve and maintain maximum employment in Canadian industry, to increase national income and to reduce economic disparities.

International Trade

By providing information on export opportunities and giving sales assistance, the department strives to increase the international market for goods and services

Unloading containerized cargo, Vancouver, BC.





A Canadian-made oil drilling rig in the Atlantic Ocean.

produced in Canada. Trade arrangements are negotiated to give Canadian producers access to world markets. In addition the department develops trade strategies, provides financial assistance and maintains Canadian trade representatives throughout the world.

Tourism

The sustained and orderly growth of tourism and the travel industry in Canada is the objective of the tourism program. To encourage both Canadians and visitors to explore Canada, the department provides information, market research and analysis, market planning and a variety of promotional campaigns in all news media. The requirements for expanding the travel industry are assessed and various programs to assist that development have been devised. A policy, planning and industry relations section provides direction to the tourism program and co-ordinates the efforts of federal, provincial and private developers of the tourist industry.

Grains and Oilseeds

While the management of a system for marketing Canadian grains and oilseeds and the expansion of markets for these products comes under the Minister Responsible for the Canadian Wheat Board, the Deputy Minister of Industry, Trade and Commerce is responsible for its marketing operations and for administering payments made under the program. The marketing activity is intended to complement and extend efforts by the private sector through the provision of market intelligence and financial assistance. Production guidelines are determined and initial payments for Wheat Board grains are established.

Regional Economic Expansion

While Canada enjoys one of the world's highest standards of living, its history and geography have dictated a wide disparity of economic, social and cultural well-being. Employment opportunities, per capita income, cost of living and social and cultural services vary widely, not only from province to province, but from one region of a province to another.

The federal government has long recognized the need to reduce these disparities and has met this need in the past with programs such as the Prairie Farm Rehabilitation Administration (PFRA), the Agricultural and Rural Development Act (ARDA) and the Fund for Rural Economic Development (FRED). However, solutions to the long-term problems of regional disparity require not only the concerted effort of the federal government but also co-ordination of this effort with the actions of other levels of government. For this reason the Department of Regional Economic Expansion (DREE) was formed in 1969. The department inherited such programs as PFRA, ARDA and FRED and was given responsibility for the newly-legislated Regional Development Incentives Act.

DREE has responded to the need for co-ordinated action with provincial governments through a geographically decentralized organization and through negotiation of agreements with each province for concerted development action.

The department has adopted an organization with decentralized authority in each of four regions—Atlantic, Quebec, Ontario and Western. Each region is headed by an assistant deputy minister responsible for planning and executing all DREE activities within the region. In addition a DREE office in each provincial capital, headed by a director general, is responsible for activities within the province under the authority of the regional assistant deputy minister. Thus, significant decision-making authority in terms of both existing programs and new initiatives rests with DREE officers close to provincial policy-makers. Sixty-one per cent of the total DREE staff and 70 per cent of the senior executives work in regional and provincial offices.

In 1974 DREE entered into an individual 10-year General Development Agreement (GDA) with each province except Prince Edward Island, where a 15-year

Factory at Arvida, Que.



Comprehensive Development Plan was signed in 1969. GDAs provide the framework for co-ordinated federal-provincial action to realize each province's potential for socio-economic development. Each GDA consists of a statement of mutually-agreed objectives, a broad strategy for development and guidelines for implementation.

The GDAs provide for subsidiary agreements to be entered into for the implementation of development initiatives agreed upon by the federal and provincial governments. GDAs also identify the criteria of impact and cost that should be taken into consideration in the formulation of subsidiary agreements, such as: direct job creation, spin-off effects, implications for quality of life and the environment and the effect on immediate and future expenditures.

The department's efforts therefore fall into three broad categories: sub-agreements; activities under the Regional Development Incentives Act (RDIA); and other programs such as PFRA, ARDA and FRED.

Sub-agreements

Subsidiary agreements are varied, depending upon the mutually-defined objectives of the federal and provincial governments. Examples are: a sub-agreement with Saskatchewan for the development of iron, steel and related industries; one with Manitoba for social and economic development of the northern part of the province; one with Newfoundland for a comprehensive forestry development program; and one with Quebec for expansion of the industrial infrastructure. Initiatives under these agreements are financed on a cost-sharing basis by federal and provincial governments. More than 60 sub-agreements have now been signed, calling for a federal commitment of more than \$960 million.

Regional Development Incentives Act

RDIA activities are aimed at stimulating manufacturing investment and employment in slow-growth areas of the country. Financial incentives are offered to encourage businesses to locate in regions designated for assistance or to expand or modernize plants already established in these regions. Since the program was introduced in 1969 DREE has helped, through more than \$551.4 million in grants, to generate a total of \$2.6 billion in capital investment and to create directly an estimated 125,000 new jobs.

Other Programs

DREE's responsibilities include a variety of other programs, most of which are aimed at problems of a limited nature or in a defined area. Included in this category are the previously mentioned PFRA, ARDA and FRED programs. In addition there is the special ARDA program operating in Manitoba, Saskatchewan and British Columbia; the purpose of special ARDA is to improve the economic circumstances of people of Indian ancestry in rural areas by providing financial and other assistance to create job opportunities.

A number of other programs, such as the Special Highways Agreements and the Mineral Development Agreements, have been phased out.

Consumer and Corporate Affairs

Consumer and Corporate Affairs Canada was established in December 1967 to bring together under one minister as much as was practical of federal law governing and regulating business and consumer transactions in the Canadian marketplace.

The new department was assigned the role of fostering an efficient market system for the benefit of all Canadians, whether consumers, businessmen or investors. Its existence reflects Parliament's view that the competitive market system is the basis of an efficient economy and that it can be structured to operate for the good of Canadian society as a whole.

Legislation and policies administered by the department are designed to stimulate efficiency and productivity on the part of those who supply the market with goods and to promote fair economic treatment for all concerned in commercial transactions. One result of the department's activities has been a strengthening of the concept of consumer rights and responsibilities and the provision of information to the widest possible consumer audience. But informing consumers of the rights, responsibilities and remedies available to them is only the beginning; an informed consumer must then help himself set a fair deal in the marketplace.

Responsibility for achieving these objectives is shared by four bureaus and the Field Operations Service.

The Bureau of Consumer Affairs develops legislative proposals and programs and provides technical guidance to field staff on a number of important consumer

The existence of Consumer and Corporate Affairs Canada reflects Parliament's view that the competitive market system is the basis of an efficient economy.





Testing tins of corn.

protection laws dealing with packaging, labelling, legal metrology and hazardous products. In addition to dealing with complaints and inquiries the bureau carries out extensive consumer information and research programs and provides personal help at the neighbourhood level through 16 community-based and community-oriented Consumer Help Offices.

Gift shop, Chicoutimi, Que.

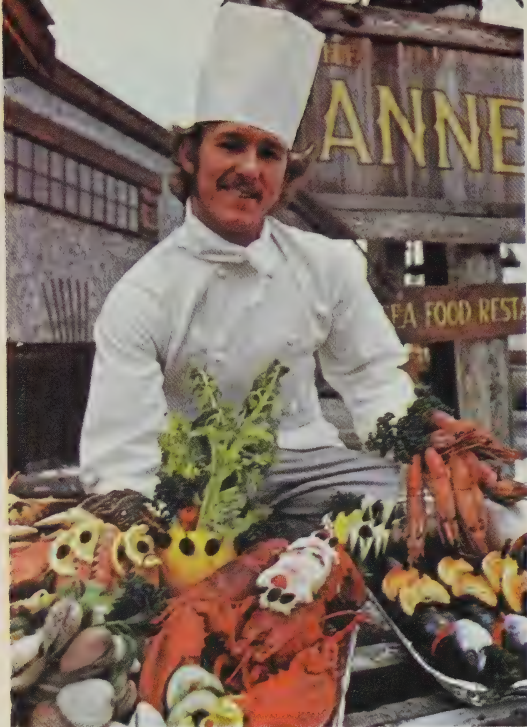




Manufacture of beer bottles, Bramalea, Ont.

The Bureau of Corporate Affairs concerns itself with the legal framework governing the orderly conduct of business. It grants charters of incorporation to new businesses and presides over bankruptcy proceedings for insolvent companies and the licensing of trustees in bankruptcy. The bureau's bankruptcy programs have been extended to benefit low-income individuals. Liquidations are administered for a fee of \$50 and even that can be waived if the debtor is unable to pay; to qualify a debtor must have debts exceeding \$1,000 and have a total income of less than \$6,500 a year if married or \$4,000 if single.

The Bureau of Intellectual Property brings together all the operations within Consumer and Corporate Affairs Canada that pertain to patents, trademarks, copyright and industrial design. The objective of the bureau, which is to encourage innovation, creativity and the dissemination and use of all forms of knowledge, is achieved through the granting of exclusive property rights in inventions (patents), trademarks and industrial designs and of copyright in original literary, dramatic, musical and artistic works. Ownership rights are granted so that innovators, who can thus control and profit from the reproduction of their creations, will be encouraged to make their innovative works available for the benefit of all Canadians.



Some of the fare of a seafood restaurant, Vancouver, BC.

The Bureau of Competition Policy administers the Combines Investigation Act, the legislation aimed at maintaining a competitive market system. Under the Act the Director of Investigation and Research has the power to conduct inquiries when he has reason to believe there may have been a violation of the Act with respect to agreements, mergers, monopolies, price discrimination, promotional allowances, misleading representation as to prices, false and misleading advertising or retail price maintenance. Results of his inquiries are sent to the Restrictive Trade Practices Commission for consideration and public report or to the Attorney General of Canada for possible legal action; the Attorney General decides whether charges should be laid following the report of the commission. Stage II revisions of the Combines Investigation Act, which relate to competition policy issues concerning the structure and efficiency of industries in the Canadian economy, were introduced in Parliament in March 1977.

The Field Operations Service is responsible for a field force operating from regional offices in Vancouver, Winnipeg, Toronto, Montreal and Halifax and from 53 district and sub-district offices. It implements and enforces legislation administered by the department and ensures that it is uniformly interpreted and applied. Inspectors deal with a wide range of matters from food to textiles and from hazardous products to the accuracy of weighing and measuring devices, and include specialists in bankruptcy and false and misleading advertising. A consumer's consulting service is provided at each regional office and in more than half of the district offices.



Vancouver, BC.

Urban Affairs

The Ministry of State for Urban Affairs was created June 30, 1971, as a key element in the federal government's response to the challenge of rapidly accelerating urbanization.

The ministry is a policy agency designed specifically to co-operate with other federal departments and agencies to plan, develop, foster and co-ordinate policies and programs through which the federal government can exert a beneficial influence on Canada's urban centres in close co-operation with other levels of government and with non-governmental groups. Policy-making for urban Canada is concerned with injecting urban considerations into the development and implementation of other federal policies and programs and with fostering intergovernmental relationships to promote co-ordination of urban policies and programs.

The ministry is actively involved in several policy areas:

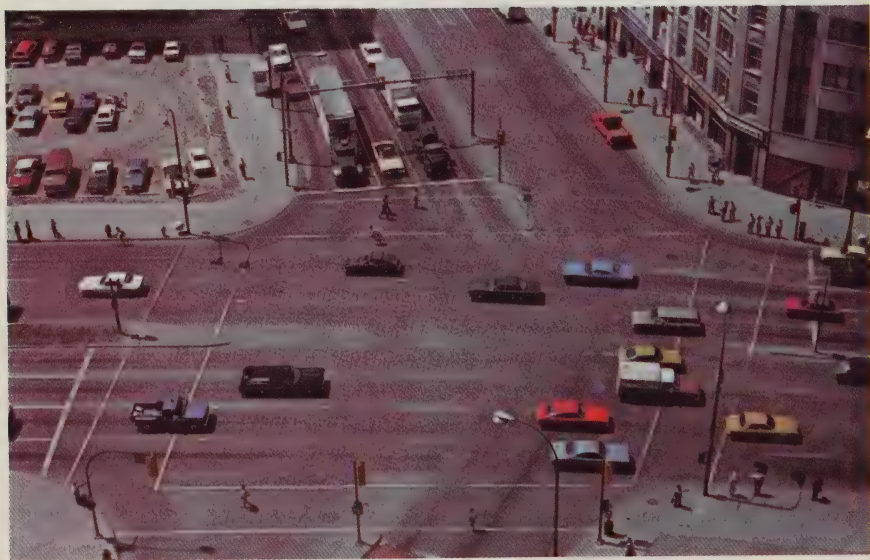
Urban Economy. It is developing policy alternatives and program proposals for urban public finance, examining different ways of financing urban expansion in Canada and participating in a tri-level examination of public finance.

Urban Land Use. The ministry is participating in the implementation of federal land management policy, which is designed to harmonize planning and use of federal lands with the development goals and strategies of local communities and regions wherever possible. In conjunction with Central Mortgage and Housing Corporation it is also investigating the implications of the ever-increasing consumption of land peripheral to urban centres. The ministry is co-operating with other departments and governments to determine appropriate policies to ensure that the scarce land resource is utilized in a manner that maximizes the benefits of urbanization.

Urban Transportation. The ministry has developed and recommended urban transportation policies, including the National Urban Transportation Development Corporation and the railway relocation program, and is participating in implementation of the latter under an Act passed in June 1974. It is also co-operating with the Ministry of Transport in examination of the National Transportation Act and offering advice on the impact of transportation policies on national urban patterns and metropolitan growth rates.

Under the provisions of the Railway Relocation and Crossing Act the federal government has the power to expropriate railway land, allowing cities and towns to plan urban redevelopment. The program applies particularly to cities where railway facilities—tracks, yards and terminals—are obstacles to the planned redevelopment of the community. Part I of the Act permits the Ministry of State for Urban Affairs to financially support urban planning in connection with relocation and rerouting

The corner of Portage and Main, Winnipeg, Man.





Winnipeg, Man.

proposed by provinces and municipalities, so that improved community services and facilities can be developed.

Natural Environment and Resources. The ministry is developing policies and guidelines relating to the effects of urbanization on the use of natural resources and the quality of the natural environment. For example, it is trying to determine how

Lunenburg, NS.





Montreal, Que.

the type of urbanization affects the use of energy resources and how new developments in the energy field may lead to decreased dependence of urban areas on non-renewable energy sources.

Community Development. The ministry is examining how the federal government can support provincial and municipal governments in meeting their urban development objectives. For larger urban areas the focus is problems like congestion, deterioration of the core and suburban sprawl. For smaller communities the ministry is examining how federal policies and programs can enhance their attractiveness and economic role.

Settlement Trends. The ministry is examining how current and expected future developments can be expected to influence the future pattern of settlements in Canada. A special aspect of this work is to determine the effects of various federal government activities on the process of Canadian urbanization, so that undesirable influences can be minimized and future program requirements anticipated.

Human Environment. The ministry is developing measures and standards for the range and accessibility of community amenities and social services. It is also studying perceptual indicators, which establish public perceptions of the amenities and services that are important in the urban environment. The results can be used to guide federal government involvement in urban areas.

Veterans Affairs

Nearly one million Canadians receive assistance from the Department of Veterans Affairs and the four agencies associated with it—Canadian Pension Commission, Pension Review Board, War Veterans Allowance Board and Bureau of Pensions Advocates. Services include medical treatment, welfare counselling and assistance, pensions and war veterans' allowances and educational assistance to children of the war dead.

Veterans' Land Act. March 31, 1975, was the final date for the acceptance of loan applications from qualified veterans of World War II or the Korean Special Force for settlement under the full- or part-time farming provision of the Veterans' Land Act. From the passing of the Act in 1942 until December 31, 1976, loans and grants totalling \$1.4 billion were made to 139,741 veterans. Of these, nearly 55,000 veterans have subsisting purchase contracts representing repayable principal indebtedness of approximately \$500 million. Within the maximum loan ceilings specified in the Act, these veterans were able to apply for additional assistance up to March 31, 1977.

The Veterans' Land Administration also has operational responsibility for the Special Housing Assistance Program, which the Department of Veterans Affairs was authorized to extend in 1975 on behalf of modest-income veterans. Under this program, financial assistance of up to \$600 annually may be provided to veterans, in addition to that available to them under the Assisted Home Ownership Program of the National Housing Act, for the purpose of reducing the proportion of their income required for principal, interest and taxes to a level they can afford. Since inception in 1975 assistance representing \$62,800 in annual grants has been approved on behalf of 127 veterans.

The Special Housing Assistance Program for veterans also provides authority for the department to extend financial assistance to non-profit corporations who obtain loans under Section 15.1 of the National Housing Act for the development of low-rental projects intended primarily, but not necessarily exclusively, for the housing of veterans. In addition to the benefits available from Central Mortgage and Housing Corporation (CMHC) the Department of Veterans Affairs may make a grant equal to 10 per cent of the capital cost of such a project, as determined by CMHC. Since inception in 1975 grants totalling approximately \$1,100,000 have been approved for six such projects, involving 480 units.

Treatment Services extended care to more than 23,000 veterans during the 1975-76 fiscal year and administered six hospitals and three veterans' homes.

The Canadian Pension Commission administers the Pension Act, which provides compensation to members of the Canadian Forces who have been disabled or who have died as a result of military service and to their families. During the year ended December 31, 1976, there were almost 114,000 pensions being paid to veterans and 26,500 to their surviving dependents. The Pension Act provides that pensions be paid in accordance with the extent of the disability. As of January 1, 1977, the basic rate of pension for a single pensioner whose disability was assessed at 100 per cent was \$552.62 a month; additional pension for a wife and child would have brought this amount to \$768.21 and a pensioner's widow would have received \$417.47.

The Pension Review Board serves as a final court of appeal for veterans, ex-servicemen and their dependents in all matters concerning disability pensions and the interpretation of the Pension Act. The board, although essentially an appellate body, may also consider new documentary evidence. In the calendar year 1976 the board received 1,136 appeals and heard 543 claims dealing with pension entitlement and increase in assessment, which concerned 844 different disabilities. The board also rendered two decisions on matters of interpretation.

The Bureau of Pensions Advocates provides counsel and free legal aid to pension applicants in the preparation and presentation of their pension claims. The relationship between the bureau and applicant or pensioner is that of solicitor and client. The bureau submitted 8,359 claims to the Canadian Pension Commission under various sections of the Pension Act during the fiscal year 1976-77. Pensions Advocates also presented 5,039 cases at Entitlement Board and Quantum Hearings during the year. Specialist advocates of the bureau staff at head office made 818 submissions to the Pension Review Board, which is the final court of appeal under the Pension Act.

Veterans Services. The operations of the department's Veterans Services embrace a wide variety of payments and services in Canada and abroad. At the end of 1976 approximately 92,000 veterans, specified civilians, widows and orphans were receiving allowances authorized by the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowance Act, representing an annual expenditure of \$190,000,000. Adjudications under these statutes are made by War Veterans Allowance District Authorities composed of Veterans Services employees appointed by the minister. There are 19 such bodies, one for each departmental district in Canada and one dealing with allowances for recipients outside Canada.

Twenty-six thousand allowance recipients were receiving supplementary payments under the Assistance Fund Regulations in recognition of need arising from budgetary deficits or urgent requirements such as housing renovations and repairs. Supplementation amounted to approximately \$12,000,000 during the year.

Post-secondary educational assistance was extended to approximately 900 students under the Children of War Dead Educational Assistance Act. Assistance took the form of payment of tuition fees and monthly allowances.

Social counselling services were provided to veterans and their dependents encountering social, economic and vocational difficulties, with more than 6,000 receiving service over extended periods. This included access assistance to benefits available from other programs and agencies, including private social agencies.

Veterans Services also provided support to the Canadian Pension Commission in carrying out non-medical fact-finding activities and to all other components in the maintenance of Central Registries of veterans' files.

In addition the service provided for the maintenance of 13 Canadian war memorials in France and Belgium and maintained connections with the Commonwealth War Graves Commission, the Last Post Fund, service benevolent funds, the Canadian Corps of Commissionaires and other bodies.

The War Veterans Allowance Board is a statutory, quasi-judicial body, independent as far as its decisions are concerned, reporting to Parliament through the Minister of Veterans Affairs. The board advises the minister generally on the



The Royal Canadian Air Force memorial, Ottawa, Ont.

War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act and specifically on the regulations pertaining to them. The board adjudicates specific sections in the War Veterans Allowance Act where it has sole jurisdiction, acts as a court of appeal for aggrieved applicants and recipients and reviews the decisions of 19 district authorities located in major cities across Canada to ensure that adjudication is consistent with the intent and purview of the legislation and that the legislation is applied uniformly throughout Canada. During the fiscal year 1975-76, on the recommendation of the board, the Veterans Allowance Regulations and Civilian Allowance Regulations were amended to provide a partial exemption of Spouse's Allowance benefits under the Old Age Security Act to spouses of War Veterans Allowance and Civilian War Allowances recipients. During the same period the board reviewed more than 1,500 decisions rendered by the district authorities, adjudicated 265 appeals for aggrieved applicants and recipients and adjudicated 420 cases pertaining to domestic status and 478 cases pertaining to service eligibility of applicants and recipients.

Health and Welfare

Health Care

The provision of health care services in Canada falls mainly within the jurisdiction of the provincial governments. Nevertheless, the federal government plays a significant role in the development of many policies and programs designed to improve the physical and mental health of all Canadians.

Provincial Responsibilities

Constitutionally and by tradition the provincial governments have the primary responsibility for health measures to prevent disease, provide treatment and maintain health. Activities such as preventive health services, hospital services, treatment services for tuberculosis and other chronic diseases and rehabilitation and care of the chronically ill and disabled have always, therefore, depended chiefly upon this level of government. Methods of organization, financing and administration vary from province to province.

In addition to administering the hospital and medical care plans and the mental and other types of specialized health facilities, provincial health departments supervise the provision of community health services that are delegated to district or regional health units and city health departments. Administered by regional or city boards or councils, the health units are responsible for most of the preventive health services at the community level, including environmental sanitation, control of infectious diseases and promotion of maternal and child health, mental health and health education.

Most mental and tuberculosis hospitals and clinics are provincially operated or funded, as are special treatment centres for venereal disease, cancer, alcoholism and other specific diseases and the public health laboratories that aid both the health agencies and practising physicians in diagnostic and control procedures. Provincial agencies are also primarily responsible for the collection and analysis of vital statistics and for the study of epidemiological and related social and economic conditions. Other provincial programs include occupational health, nutrition, health education and pollution control, frequently in collaboration with the federal government.

Department of National Health and Welfare

Health Protection Branch: The Health Protection Branch of the Department of National Health and Welfare is responsible for protecting the public from possible risks to health from foods, drugs, cosmetics and medical devices sold on the Canadian market. Under the Food and Drugs Act, standards for safety and purity in foods are developed through laboratory research and maintained by regular and widespread programs of inspection.

Every drug manufacturer is required by law to submit information to the branch on every product that is marketed in Canada. The branch has the authority to ban



Speech therapy.

the sale of any drug that is unsafe or injurious to health. Its Drug Quality Assessment Program is aimed at producing objective evidence on the quality of the drugs already on the market and making it available to the health professions, governments and the general public.

Under the Proprietary or Patent Medicine Act the Health Protection Branch controls the manufacturing, licensing, labelling, advertising and merchandising of home remedies, which are often sold in retail outlets other than drugstores. Under the Narcotics Control Act the branch exercises control over traffic in narcotics and hallucinogens, to prevent their exportation, importation, manufacture or cultivation by persons other than those authorized by law. The branch also administers the Non-Medical Use of Drugs Program, which is designed to combat the misuse of mood-altering drugs; one important aspect of this program's work is the effort made to persuade smokers to quit and young persons not to start smoking tobacco.

In the area of control of communicable diseases, the branch's laboratories are involved in the development and implementation of preventive, diagnostic, quality control and other measures. These laboratories also provide a reference service for the identification of disease-producing bacteria, viruses and parasites.

Health Programs Branch: The Health Programs Branch is responsible for the administration of the federal aspects of Canada's two most important health programs, Hospital Insurance and Medical Care Insurance.

In 1976 the department actively participated in negotiations with the provinces to reach agreement on a new cost-sharing arrangement.

Hospital Insurance: The Hospital Insurance Program provides for a system of federal grants-in-aid to the provinces to meet about 50 per cent of the costs of specified in-patient and out-patient services, as set out in the federal Hospital



Specially equipped kitchens are used in rehabilitation programs for the handicapped.

Insurance and Diagnostic Services Act of 1957. Included in the insured services are: accommodation, meals, necessary nursing service, diagnostic procedures and most pharmaceuticals; operating rooms, case rooms and anaesthesia facilities; and, if available, radiotherapy and physiotherapy. At present this program covers about 99.8 per cent of the eligible population of Canada.

Federal contributions under this program do not cover the services of tuberculosis hospitals and sanatoria, mental hospitals or institutions providing custodial care, such as homes for the aged. The methods of administering and financing the program and the provision of services above the stipulated minimum required by the Act are left to the provinces.

Medical Care: Under the Medical Care Act the federal government contributes to each participating province half of the national per capita cost of insured medical services for each insured person in that province. In order to be eligible for the federal contribution under this program, provincial plans must: cover all medically required services rendered by a physician; be available to all eligible residents on equal terms and conditions and actually cover at least 95 per cent of them; provide coverage to persons while they are moving between provinces; and be administered by a non-profit authority.

Several methods are used by the provinces to finance their shares of the cost; for example, premiums are levied in Ontario, Alberta, British Columbia and the Yukon Territory. The characteristic mode of paying physicians is a fee for each insured service rendered. Some provincial plans also insure residents for benefits not eligible for cost-sharing by the federal government, such as the services of optometrists, chiropractors, podiatrists, osteopaths, naturopaths and dentists and the costs of some prescribed drugs.

The Health Programs Branch also plays a major role in both development and promotion of measures conducive to optimum personal health and in the support of health research.

Medical Services Branch: This branch supplements provincial health care services and provides special public health services for Inuit and registered Indians. It is also responsible for health programs affecting all residents of the Yukon Territory and the Northwest Territories; to meet their needs it operates several hospitals and numerous other health facilities, primarily in isolated northern areas.

Other activities of the branch include the examination and treatment of immigrants and the quarantine control of persons entering or leaving Canada in order to reduce the possibility of importing or exporting certain infectious diseases. It is responsible for health services in national parks and the sanitary surveillance of interprovincial and international common carriers.

The branch also provides diagnostic services, counselling on health problems and other occupational health services for federal public servants. It acts in an advisory capacity to the Ministry of Transport on civil aviation and marine medicine, operates a trans-Canada prosthetic manufacturing and fitting service and co-operates with provinces to meet general and local disaster situations.

Long-Range Health Planning Branch: The Long-Range Health Planning Branch generates ideas and reports that provide major long-range health benefits to Canadians. The benefits include better health, lower costs and greater accessibility of health services.

Many organizations now provide their employees with facilities for physical fitness classes.





Jogging is a popular way of keeping fit.

Other activities of the branch are directed toward arousing a general awareness among Canadians of the avoidable risks that they impose upon their own health and toward generating concern among health administrators about the extent to which self-imposed risks contribute to sickness and death.

Fitness and Amateur Sport Branch: The Fitness and Amateur Sport Branch of the department encourages, promotes and develops fitness and amateur sport. To motivate Canadians to pursue excellence in competitive sport, the branch has established an administrative centre to house 36 national sports-governing bodies and associations. In addition to its efforts on behalf of top-calibre athletes, the branch is striving to provide the greatest possible diversity of recreational opportunity to Canadians.

The branch co-ordinates its efforts with provincial directors of sport and recreation and co-operates on projects of mutual interest such as the Canada Games. Special grants are made available to some provinces to assist in raising the level of sport and recreation activities.

Social Security

Federal, provincial and local governments provide a wide range of publicly funded and administered income security and social services programs, which are complemented by voluntary agencies. Public programs include: income insurance schemes such as the Canada and Quebec Pension Plans, Workmen's Compensation and Unemployment Insurance; income support measures such as the Old Age Security Pension, the Guaranteed Income Supplement and Spouse's Allowance, and Family Allowances; and social assistance provided by provincial and municipal programs.

A new approach proposed by the federal government to the provinces in 1976 is the Social Services Act, which would change that part of the Canada Assistance Plan dealing with social services. This proposal suggests, among other things, that some services such as crisis intervention services, information and referral services and family planning services be provided to anyone who applies. Specific services to be provided to designated groups would include: preventive, protective and supportive services for children; rehabilitation services to disabled persons; social integration services to persons who are, or are at a risk of being, socially isolated from community life; residential services for those needing care in an institutional setting; supportive services for the elderly; and community development services and community-oriented preventive services. The provincial governments and, by delegation, the municipalities have primary responsibility for the administration of social assistance and social services; the federal government, through the proposed Social Services Act, would pay 50 per cent of such services.



Income Insurance

The Canada Pension Plan. The Canada Pension Plan (CPP) and the Quebec Pension Plan (QPP) together constitute a vehicle whereby millions of members of the work force between the ages of 18 and 70 acquire and retain, during their productive years, protection for themselves and their families against loss of income due to retirement, disability or death, regardless of where their work may take them in Canada. It is a compulsory earnings-related scheme that pays to eligible applicants retirement benefits, disability pensions, pensions for surviving spouses, orphans' benefits, benefits for the children of disabled contributors and a lump-sum death benefit. Benefits are adjusted annually to reflect full cost-of-living increases and amendments introduced in 1975 assure equal treatment for male and female contributors and beneficiaries. In 1977 employees paid 1.8 per cent of that portion of their annual earnings between \$900 and \$9,300; this contribution was then matched by the employers. Self-employed persons contributed 3.6 per cent on the same earnings range. The earnings ceiling of the plan (\$9,300 in 1977) will be increased by 12.5 per cent each year until it catches up to the average earnings of Canadian industrial workers as published by Statistics Canada.

Old Age Security, Guaranteed Income Supplement and Spouse's Allowance. An Old Age Security (OAS) pension is payable to anyone who is 65 years of age and over and who has fulfilled the residence requirements in one of the following three ways: by having resided in Canada for the 10 years immediately preceding approval of the application; by having been present in Canada, prior to that 10-year period and after reaching age 18, for a time sufficient to equal three times the total length of

A senior citizens' orchestra in Montreal, Que.





A centre for senior citizens, Montreal, Que.

absences in the preceding 10 years, as well as having resided in Canada for at least one year immediately preceding approval of the application; or by having resided in Canada for a total of 40 years after reaching age 18. Once a person has become a pensioner, he or she may receive payment indefinitely while living abroad if he or she has resided in Canada for 20 years after age 18; otherwise, payment may continue for only six months following the month of departure from Canada.

A Guaranteed Income Supplement (GIS) may be added to the basic OAS pension, depending on the results of an income test. The supplement is payable for only six months outside of Canada, regardless of the pensioner's previous length of residence.

The spouse of a pensioner may be eligible for a Spouse's Allowance (SA) if the spouse is between 60 and 65 years of age and meets the OAS residence requirements. This allowance, like the GIS, is awarded on the basis of a test of income; as of January 1977 the SA was payable, upon application, if the combined yearly income of the couple was less than \$6,576.

The maximum SA, which is equal in amount to the OAS pension plus maximum GIS at the married rate, stood at \$229.37 a month in January 1977. On the same date the following rates applied: the monthly OAS pension was \$141.34; the maximum monthly GIS for a single pensioner or a married pensioner whose spouse did not receive OAS or SA was \$97.76; for a married couple, both pensioners, the maximum monthly GIS was \$88.03 each. The OAS pension and the maximum GIS and SA are adjusted quarterly to reflect increases in the consumer price index.

Family Allowances. Family Allowances (FA) are paid monthly on behalf of children under the age of 18 who are resident in Canada and maintained by parents

or guardians, at least one of whom must be a Canadian citizen, a landed immigrant or a non-immigrant admitted to Canada under prescribed circumstances; payment is normally made to the mother. Allowances are also payable under certain conditions to residents of Canada who are absent from the country. Family Allowances are taxable and must be included as income by the person who claims the child as a dependent.

Special Allowances at the federal FA rate are payable monthly, in all provinces, on behalf of children under 18 who are maintained by welfare agencies, government departments and institutions. In some cases, payment is made directly to a foster parent at the request of the maintaining department or agency. Special Allowances are not taxable.

In 1977 the federal rate of Family Allowances and Special Allowances was \$23.89 a month. The legislation allows a province to vary the Family Allowances rates paid in that province, provided certain conditions are met. Quebec and Alberta have chosen to vary the rates for their provinces, and Quebec and Prince Edward Island have added their own family allowances programs to supplement those of the federal government.

Social Assistance

All provinces have programs to provide social assistance to persons in need and to their dependents. Assistance is granted on the basis of a needs test, which takes into account both budgetary requirements and the income and resources of the applicant and his or her dependents. In addition to items of basic need, assistance may include

Day-care centre, Inuvik, NWT.





items of special need, non-insured health care services and costs of homes for special care. Provision is also made for supportive services such as homemaker, day-care and community development and for preventive services such as counselling, rehabilitation and adoption. These services may also be provided to persons likely to become persons in need without them.

Canada Assistance Plan. Under the Canada Assistance Plan (CAP), the federal government pays 50 per cent of the cost of providing assistance and welfare services to persons who qualify in accordance with provincial law. Most provinces have discontinued the categorical programs for the blind and disabled; such persons may now receive assistance on the basis of need through the provincial social assistance programs under CAP. In the near future the federal government hopes to introduce for parliamentary approval a new social services act that, if legislated, would replace for the most part the welfare services provisions of CAP; this new legislation is intended to broaden the basis for federal cost-sharing in provincial social services programs.

Child Welfare Services. Statutory services for the protection and care of children who are neglected or who are temporarily or permanently without parental care include protection in their own homes, in foster homes or in an institution, as well as adoption services and services to unmarried parents. These programs are administered by provincial authorities or local children's aid societies.

Day-care centres are operated by local governments, voluntary associations or charitable organizations, or under commercial auspices. In addition to being licensed, they must meet the standards set by the relevant provincial government and comply with regulations relating to maintenance, safety, transportation and records.



Senior citizens in a crafts workshop, Toronto, Ont.

Services for the Aged. Generally speaking, institutional care is available for older persons unable to care for themselves. Although by no means organized in all areas, visiting nurse, homemaker, counselling, information and referral, and meals-on-wheels services, as well as friendly visiting and housing registries, have also been established under public and voluntary auspices. Low-rental housing projects have been built in many communities; clubs and centres to provide recreation and social activities have been developed.

The federal New Horizons Program affords older people the opportunity to participate more actively in community life. It provides grants to groups of retired citizens for non-profit projects in such fields as physical recreation, crafts and hobbies, historical, cultural and educational programs, social services, information services and activity centres.

International Welfare and Social Security

Canada actively participates in the social development activities of the United Nations (UN) through its involvement with the Economic and Social Council, the General Assembly and the Executive Board of UNICEF and through UN seminars and conferences dealing with social policy. The Department of National Health and Welfare co-operates with the Canadian International Development Agency and the Department of External Affairs in this area, in conjunction with provincial departments and agencies.

The Department of National Health and Welfare is a member of several international voluntary organizations and its officials participate in the work of the International Social Security Association, the Organization for Economic Co-operation and Development and the International Labour Organization. The Canadian position on bilateral social security agreements is presently being developed.



Autumn in Nova Scotia.

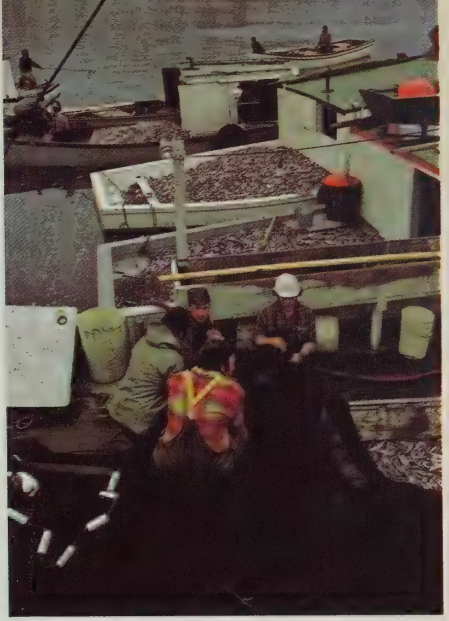
Fisheries and Environment

Fisheries and Environment Canada came into being officially in June 1971 to amalgamate major federal responsibilities for the protection, preservation and enhancement of the quality of the environment and related renewable resources.

The principal objectives of the department are: administering ongoing resource programs and services; providing weather and climatological services and atmospheric research; abating air, water and land pollution and preventing new environmental hazards; assessing and controlling the environmental impact of major developments on federal lands or involving federal funds; initiating long-term environmental protection programs; promoting and supporting international environmental and resource-management initiatives; and developing informative and educational programs.

Organization

Fisheries and Environment Canada has three principal components: Fisheries and Marine Service and Environmental Services, each headed by a senior assistant deputy minister, and the Planning and Finance Service, headed by an assistant deputy minister.



The fish catch, Harbour Breton, Nfld.

Fisheries and Marine Service. The responsibilities of this service include: the management of Canada's ocean and inland fisheries in co-operation with the provinces; fisheries and oceanographic research contributing to the management, understanding and optimum use of renewable aquatic resources and marine waters; hydrographic surveying and charting of navigable coastal and inland waters; and

Fishing fleet, Vancouver, BC.



research in support of international agreements relating to fisheries management and marine environmental quality. The service is also responsible for the planning and administration of some 3,000 harbours for small craft and conducts environmental impact studies affecting coastal and inland waters.

Environmental services include the Atmospheric Environment Service (AES), the Environmental Protection Service (EPS) and the Environmental Management Service (EMS).

The *Atmospheric Environment Service* is concerned primarily with meteorology—the science of the atmosphere. The service provides national weather and climatological services for the public and special users. Since 1958 it has been responsible for ice services in support of navigation in Canadian waterways, coastal waters and the Arctic archipelago. It is also actively engaged in meteorological research, research on the effects of pollutants on the earth's atmosphere, and instrument design.

The *Environmental Protection Service* develops national environmental control guidelines, requirements and regulations in consultation with the provinces and industry. The service carries out the assessment, surveillance, negotiations or enforcement necessary to obtain compliance with federal environmental legislation. It identifies and solves pollution problems, develops and demonstrates pollution control technology and serves as the focal point for all aspects of environmental protection for federal works, agencies and undertakings.

The *Environmental Management Service* co-ordinates activities related to terrestrial renewable resources, their use and the impact of their use on the

A joint government-industry oil spill protection exercise in the harbour at Hamilton, Ont.





The first completely effluent-free pulp mill in the world, Thunder Bay, Ont.

environment. It is composed of five staff directorates—Forestry, Inland Waters, Wildlife, Lands, and Policy and Program Development—concerned primarily with national environmental matters. In addition, these line management operations are decentralized in five regional directorates covering all of Canada, in an effort to provide each of the diverse regions with integrated resource management information best suited to its needs. Through its programs EMS produces data on the quantity and quality of resources, conducts research on the methods and techniques of conservation and plans the comprehensive utilization of renewable resources throughout the country as provided for in federal legislation. Because of its broad





The effects of a forest fire, 50 years later, southern BC.

interests, the service plays a significant role in the consideration of the environmental effects of development projects by participating in the Environmental Assessment and Review Process that applies to all federally supported projects.

The Planning and Finance Service comprises two major elements—directorates dedicated to policy support and those providing common support services. The three policy support directorates assist in the development of departmental policy and provide the minister and the deputy minister with an overview that gives coherence to the department's activities. The common service directorates develop guidelines, procedures and systems to support all elements of the department and provide liaison with central agencies such as Treasury Board and the Public Service Commission.

Advisory Bodies

The Canadian Environmental Advisory Council was set up to provide advice to the minister in four general areas: the state of the environment and threats to it; the priorities for federal or joint federal-provincial government action; the effectiveness of the department's efforts to restore, preserve or enhance the quality of the environment; and other matters that the minister may refer to it as the need arises.



Coastline near Quirpon, Nfld.

Kluane National Park, Y.T.





Winter scene near Kleinburg, Ont.

The Canadian Forestry Advisory Council reports to the minister and makes recommendations for action in areas of federal responsibility for our renewable forest resources. **The Canadian Fisheries Advisory Council** provides broad policy advice to the minister from outside government on areas of responsibility related to our fisheries resource. These advisory bodies review programs, assess their impact and provide links with organizations outside the government. The councils' members include prominent Canadians from industry, the universities and the scientific community. The Canadian Forestry Advisory Council includes representatives from provincial natural resources departments and the Canadian Fisheries Advisory Council's membership includes commercial and recreational fishermen.

The Environmental Assessment Panel is responsible for conducting environmental review of projects referred to it by federal departments and agencies. The panel is a major component of the federal Environmental Assessment and Review Process, which was developed to ensure that: environmental effects are taken into account early in the planning of new federal projects, programs and activities; environmental assessment is carried out, before commitments or irrevocable decisions are made, on all projects that may have an adverse effect on the environment, and projects with anticipated significant effects are submitted to Fisheries and Environment Canada for review; and the results of these assessments are used in planning, decision-making and implementation. Federal projects are considered to be those that are initiated by federal departments and agencies, those for which federal funds are solicited and those involving federal property.

Although the department cannot accomplish on its own all of the necessary renewable resource and environmental tasks, owing to a division of federal and provincial jurisdictions, it can accomplish some, influence others and provide leadership in general.

Agriculture

The work of Agriculture Canada is carried out by seven branches and a number of special agencies under the authority of more than 30 Acts of Parliament. Their activities embrace most aspects of the agricultural industry and thus affect all Canadians.

Organization

The Economics Branch carries out programs to improve farm income and helps obtain new markets for Canada's farm products. The Food Systems Branch plans and co-ordinates market-oriented food systems. The Health of Animals Branch is responsible for meat inspection and for animal diseases control, research and diagnosis. The Production and Marketing Branch administers legislation concerning food commodities, farm supplies and the protection of crops from pests and diseases. The Research Branch, with nearly 50 establishments across Canada, conducts programs designed to solve problems of production, protection and utilization of agricultural crops and animals. Like the branches, the Canadian Grain Commission reports to the Deputy Minister of Agriculture; the commission administers the Canada Grain Act, which regulates grain handling through the licensed elevator system in Canada.

Farmland near Delia, Alta.



Other Agencies. In addition to the above, the Minister of Agriculture is responsible to Parliament for six other agencies. The Agricultural Stabilization Board assists farmers by supporting the prices of certain food commodities. The Agricultural Products Board buys, sells and imports agricultural products to maintain a healthy balance of food stocks in the country. The Canadian Dairy Commission supports the market prices of major processed dairy products. The Canadian Livestock Feed Board ensures the availability and price stability of feed grains. The Farm Credit Corporation, a Crown agency, makes loans to individual farmers and farm syndicates. The National Farm Products Marketing Council oversees the establishment and operation of national food marketing agencies.

Programs and Policies

Canada's fruit and vegetable storage capacity continued to expand in 1976 under the federal Fresh Fruit and Vegetable Storage Construction Financial Assistance Program. During the year agreements for financial assistance were signed with 12 producer groups for construction or renovation of storage facilities; producer organizations, co-operatives or boards engaged in the production, storage and marketing of fruits and vegetables for the fresh market or for processing are eligible for assistance under the program, under which the federal government pays one third of construction or renovation costs, to a maximum of \$500,000.

The federal Feeds Act was amended in 1976 to cover changes that have occurred in the livestock and feed manufacturing industries. The main change affecting

Spraying apple trees at Smithfield Research Station, Ont.





Canadian agricultural produce.

farmers concerned on-farm feed mixing; federal agriculture inspectors have been given the authority to check feeds manufactured on the farm to ensure that the ingredients do not leave residues harmful to human health.

The federal-provincial Record of Performance Program for beef cattle was expanded in 1976 to include a new Young Sire Proving Program. The objective of the new program is to improve efficiency in beef production by increasing the availability of extensively tested, genetically superior beef bulls. Cost to owners for having their young bulls tested in the program is met in part by federal payments.

Compensation to owners for purebred cattle ordered slaughtered in disease eradication programs under the Animal Contagious Diseases regulations was increased in 1976. The maximum compensation rate was raised to \$600 from \$450 for each purebred animal infected with brucellosis, tuberculosis or Johne's disease and ordered slaughtered. The maximum compensation rate for grade cattle remained unchanged at \$200. The maximum rates do not apply to serious outbreaks of foreign diseases such as bluetongue; in these cases compensation is awarded at the fair market value of the animals, without any upper limit.

New developments in the domestic feed grain policy, designed to encourage increased livestock and feed grain production across the country according to the natural potential of each region, were outlined in 1976. The developments included availability of domestic feed grains at corn-competitive prices, relocation of reserve stocks, modifications in feed freight assistance and funding for programs to assist the feed and livestock industries.

Protecting cattle against insects.





Prince Edward Island farmland.

In 1976 the New Crop Development Fund continued to provide financial assistance to help develop and introduce new crops and varieties and expand production areas of established crops. During the year assistance went to projects to: develop the potential of flax as a major prairie crop; evaluate oat varieties as forage; establish mustard crops in eastern Canada; expand grain production in Nova Scotia; establish high-yielding lowbush blueberry plantings in Nova Scotia; and increase the production and use of fababeans and black beans in western Canada. The New Crop Development Fund was launched in 1974 with an annual budget of \$1 million; its purpose is to bridge the gap between basic research results and their practical applications in agriculture.

External Affairs

The Department of External Affairs has three main goals: (1) to provide information and advice to the government on foreign policy issues, co-ordinate implementation of the government's foreign policy decisions, represent Canada in other countries and in international organizations and negotiate international agreements; (2) to foster understanding of Canada and its people by other governments and nations; and (3) to provide assistance to Canadians abroad.

The headquarters of the department are in Ottawa. In June 1977 Canadian diplomatic missions existed in 74 countries; some of these missions were accredited to more than one country, enabling Canada to maintain relations with another 64 governments. Countries with diplomatic missions in Ottawa totalled 87 and an additional 43 states had non-resident accreditation.

A Canadian diplomatic post in a Commonwealth country usually has the status of high commission and is headed by a high commissioner, while a post in a non-Commonwealth country is known as an embassy and is headed by either an ambassador or a chargé d'affaires. In countries with which Canada's relations are extensive, consulates have also been established in cities other than the capital.

The work of an embassy or high commission is to conduct negotiations with the government to which it is accredited, to inform the Canadian government of significant developments in that country, to watch over Canada's interests, to serve Canadians in that country and to disseminate information about Canada. A consulate has similar functions within its local territory, although it does not negotiate with the foreign government.

Canada has also established missions to advance its policies at a number of international organizations, including: the United Nations in New York and Geneva; the European Communities and the North Atlantic Treaty Organization (NATO) in Brussels; the Organization for Economic Co-operation and Development and the United Nations Educational, Scientific and Cultural Organization in Paris; and the Organization of American States in Washington.

External Relations

The conduct of Canada's external relations, for which the Department of External Affairs has major responsibility, is discussed in the section on "The People and Their Heritage".

Services to Canadians

In addition to its foreign policy role, the department provides the following services to Canadians.

Consular services to Canadians abroad. In 1976 Canada's posts abroad handled nearly 500,000 cases or enquiries, issued 36,200 passports, dealt with the deaths of 456 Canadians abroad and helped 1,018 Canadians jailed outside Canada, 627 hospitalized and 3,145 who needed financial assistance.

Passports. In 1976 the department issued a total of 654,842 passports and other travel documents through its main passport office in Ottawa, its regional passport

offices in Edmonton, Halifax, Montreal, Toronto, Vancouver and Winnipeg and its posts abroad. This included certificates of identity and UN Refugee Convention travel documents issued to eligible non-Canadians legally residing in Canada.

Assistance in international legal matters. The Claims Section of the department's Legal Advisory Division co-ordinates the department's assistance to Canadian citizens and corporations seeking fair compensation from foreign governments for nationalization or other interference with their property. Through the Private International Law Section of Legal Operations Division, the legal profession and the public can obtain assistance with the administration of private international law, particularly with procedure pertaining to the service and authentication of documents in legal proceedings abroad and the furthering of extradition proceedings to and from Canada.

Academic relations. The department encourages exchanges between its officials and members of the academic community. To fulfil this objective it seconded senior departmental officers to universities to engage in teaching, discussion and research and arranges speaking appearances by departmental officers in response to requests from universities, colleges and other interested groups.

Access to archives. The Historical Division deals with requests from scholars studying Canada's external relations for access to departmental records and assists them in their research when possible. It is also responsible for publication of the series *Documents on Canadian External Relations*.

Low-cost housing being constructed in Pakistan with Canadian aid.



Canadian International Development Agency (CIDA)

In 1977-78 the Canadian International Development Agency, the government branch responsible for Canada's program of co-operation with developing countries, completed its second year under the guidelines released in the fall of 1975, which emphasized assistance for the poorest countries and the poorest sectors inside those countries. The answer to the problems of poverty and under-development lies in a new concept of co-operation, in which the fully complementary and interrelated roles of concessionary financial aid, technical assistance and trade and monetary policies are realized. This co-ordinated approach is expected to be reflected more and more in future relations between the industrialized nations like Canada and the developing world.

Canada's involvement in development assistance began with the formation of the Colombo plan to aid the newly-independent countries of Asia in 1950 and was later supplemented by programs in 1958 for the Caribbean and in 1960 for Commonwealth Africa. Programs for Francophone Africa began in 1961 and for Latin America in 1964.

Canada's Official Development Assistance allocation for the year ending March 31, 1978, was \$972.5 million, which did not include the \$29.5 million cost of administration. In 1977-78 the largest part of these funds, \$636.8 million, went through bilateral government-to-government programs. Asia remained the largest recipient, at \$230 million, while \$100 million went to Commonwealth Africa, \$110 million to Francophone Africa, \$30 million to Latin America and \$30 million to the

Installation of a power line in Pakistan as part of a CIDA project.



Caribbean. The remainder of the funds was earmarked for other programs, such as emergency relief.

Canadian assistance consists of grants or loans. Loans are usually interest-free, with repayment over 50 years to begin in the 10th year; occasionally they are made at 3 per cent interest, with repayment over 30 years starting in the eighth year. The grant-to-loan ratio is about 65:35.

Bilateral co-operation takes four main forms—project assistance, food aid, commodity aid and lines of credit. Project aid, under which loans and grants are provided for specific development projects agreed on by CIDA and the developing country, is largest and includes the provision of Canadian advisers on the projects (552 in 58 countries as of January 1977); at the same time, residents of countries involved are given training in Canada or elsewhere to enable them to take over and continue the projects (nearly 1,100 as of January 1977). Next in value is food aid, at \$230 million, including \$97.5 million given under the multilateral program. Commodity aid is essentially a drawing account for the purchase in Canada of specific raw or semi-processed materials and fertilizer. Line-of-credit loans worth over \$100 million are in effect with several countries, providing a relatively unrestricted form of credit.

Multilateral assistance—\$289.3 million in 1977-78—is the second largest area of the budget. Of this, \$97.5 million went for food aid, mostly to the World Food Programme. The second highest amount went to the International Development Association, a branch of the World Bank; Canada's contribution to the fourth replenishment of the bank's funds, covering the years 1975-77, will total \$276 million. Canada is also a member of the Asian, Caribbean and Inter-American development banks and was a moving force behind the establishment of the African Development Fund. Canada has been a major supporter of the United Nations Development Program since its inception in 1965; the 1977-78 contribution was \$34 million. Canada also contributes to other UN programs such as UNICEF.

A growing part of Canada's assistance program involves voluntary agencies, churches, universities and other non-governmental organizations. CIDA subsidizes selected projects up to 50 per cent of the cost, to a total of \$41.9 million in 1977-78. CIDA also encourages Canadian business to participate in the industrial development of Third World countries through investment in joint ventures.

Less affected than many by the high cost of oil, Canada has taken a full role in the international effort to help those countries hardest hit by current energy problems. Canada has become the largest donor of food, has pledged \$300 million to a special International Monetary Fund account to finance oil purchases by countries with serious balance of payments problems, has extended a General Preferential Tariff to make various goods manufactured in developing countries more competitive in Canada and has begun a five-year, \$230 million program for rehabilitating the Sahel region of West Africa.

Canadian Executive Service Overseas (CESO)

Incorporated as a non-profit corporation in 1967 by a group of Canadians prominent in industry and the professions, CESO functions under the auspices of the Canadian International Development Agency. One part of its assigned task is to

recruit for overseas service Canadians who have records of achievement in their chosen fields and whose personal qualities make them good communicators. Another part of its mandate is to make it known in developing countries that there are Canadians willing to share their specialized knowledge with local enterprises that are seeking to improve their contribution to the economies of their own countries. Finally, it provides the opportunity for people to extend their careers beyond retirement by sharing their skills and knowledge with others who can and will benefit from expert advice and guidance; CESO regards this by-product of the program as an important privilege and welcomes the opportunity of preserving the accumulated knowledge of Canadian experts through productive employment.

CESO's system is simple and direct. The volunteer consultant who has expressed willingness and ability to go abroad is on the roster. When a request is made for the service overseas of a voluntary consultant, the roster is searched and one or more appropriate specialists are nominated. Ultimately the volunteer will have the opportunity to accept or reject the particular project and the client may accept or reject the volunteer. At the beginning of the 1977-78 fiscal year approximately 1,400 projects had been completed in over 40 different countries. The number of projects grows at a carefully controlled rate.

It is of interest to note that here at home the Indian Program, in which CESO now assists Indian bands and enterprises in collaboration with the Department of Indian and Northern Affairs, is proving most successful. The number of volunteers working with Indian bands from coast to coast on a wide variety of projects has numbered over 150 and that figure was expected to increase in 1977.

CESO's headquarters are in Montreal and regional representatives are located in key centres across Canada.

Canadian University Service Overseas (CUSO)

CUSO was established in 1961 as an independent non-profit organization to provide professionally and technically qualified Canadians to meet the changing manpower requirements of developing countries. Today, in addition to placing almost 800 persons in over 40 countries, it funds, administers and staffs a wide range of projects supportive to the development efforts of those countries.

CUSO is a "middle-level manpower" program operating under the plans and priorities of the countries with which it co-operates; it is not a relief, religious or emergency aid program. CUSO has programs and projects in Africa, Asia, the Caribbean, Central and South America and the Pacific.

Universities and colleges still play a vital role in the recruitment and initial selection of personnel for overseas assignments, through a network of 70-odd local committees across Canada. These committees, which operate on a voluntary basis, are usually composed of faculty and student members, returned CUSO personnel, representatives of the participating countries and members of the local community wherever possible. In addition many committees are involved in fund-raising and development education activities. The program is administered through an Ottawa-based secretariat and regional offices both in Canada and overseas.

CUSO receives a substantial part of its finances from the Canadian International Development Agency; an equal amount is contributed by overseas governments and



Health care in Malawi under the auspices of CUSO.

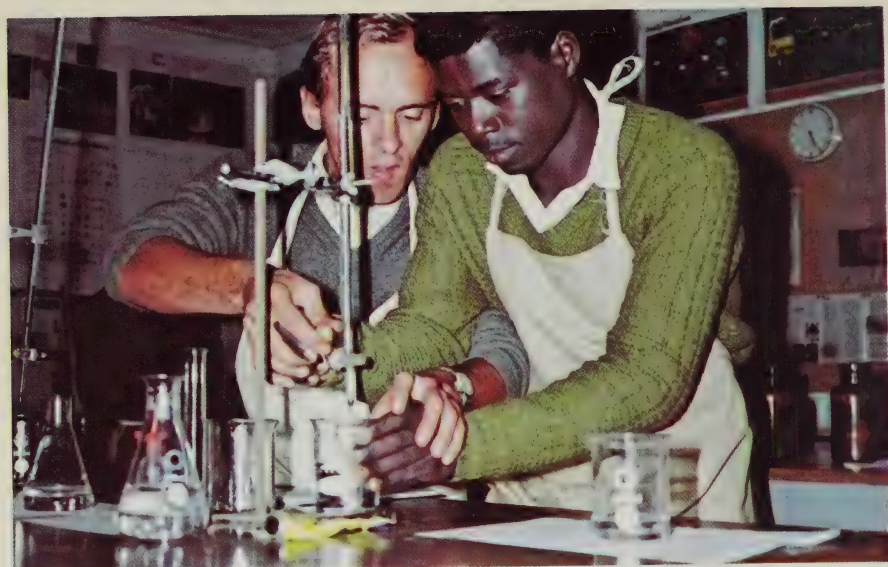
agencies in the form of CUSO workers' salaries and housing supplements. The balance comes in the form of contributions from individuals, corporations, foundations, community groups and provincial governments. Further support comes from Canadian universities, which provide free office space, equipment and staff man-hours at the local committee level.

International Development Research Centre (IDRC)

The IDRC was created by an Act of Parliament in 1970, when the need was recognized for a donor agency that had more flexibility than a government department to support research into the problems of developing countries. The objective of the centre has been to promote the economic and social development of those regions—particularly the well-being of their rural peoples—by research designed to adapt scientific and technical knowledge to their specific requirements.

This research is being carried out almost entirely by scientists and technologists from the countries and regions involved, in accordance with their own priorities. The role of the centre's senior staff is to help refine research proposals, recommend projects for funding, monitor their progress and disseminate the results as widely as possible. The provision of funds so that researchers in developing countries can direct their own studies and learn how to solve their own problems is possible only because IDRC is able to offer "untied aid".

With this general concern for the advancement of rural peoples, there is a focus on research in the following sectors: agriculture, food and nutrition sciences; information sciences; population and health sciences; and social sciences and human resources. Activities to increase food production and income through improved plant varieties have been expanded and extended to include indigenous and under-utilized foodstuffs of developing countries; research on agricultural systems and technologies attempts to bring the benefits of agricultural innovation within the reach of small farmers. The demand for information about and for



A CUSO worker teaching chemistry in Sierre Leone.

development has led to the establishment of global networks for acquiring information on all areas of science and technology and of national institutions to make it more accessible within developing countries. Research on health has as its primary concern the provision of low-cost rural services, including programs of water supply and sanitation improvement, manpower training and management and maternal and child health care. Social science programs endeavour to understand the dynamics of man in society through research on housing, education, population and the impact of the process of modernization and change in general. Programs in all sectors are integrated as much as possible, so as to operate within a unified field of development activity.

Proposals are judged by such factors as: whether they fit into the priorities of developing countries; whether they are likely to have useful application beyond the country involved; whether the research will help close gaps in living standards inside these countries; whether they will make full use of local resources and people; and whether they will leave behind investments in better trained or more experienced researchers.

The centre is a public corporation with an international Board of Governors and an international staff. The chairman, vice-chairman and nine others of the 21 governors must be Canadian citizens, but in 1975-76 the board also had members from Ethiopia, Zaïre, Iran, Indonesia, Mexico, Jamaica, Britain, France, the US and Australia. Five IDRC regional offices have been set up in Singapore, Bogota, Dakar, Nairobi and Beirut.

Financing has so far come entirely from the Canadian government in the form of annual grants. In 1975-76 the grant was \$27 million, or 3 per cent of Canada's foreign aid budget. As of December 31, 1976, IDRC had approved a total of 504 projects in 83 countries, a commitment of \$96.34 million.

National Defence

The most significant single event affecting the Department of National Defence (DND) in 1975 was the reaching of decisions in the second phase of the Defence Structure Review (DSR). In November 1974 Cabinet directed the DSR to review the tasks of the Canadian Forces, the effectiveness and optional levels of effort at which these tasks should be performed and the organization and resources required; it was steered in this task by an interdepartmental committee under the chairmanship of the Clerk of the Privy Council. The government believed this to be desirable at a time when defence budgets had been frozen for three years and when certain critical decisions on the replacement of major pieces of equipment were required.

Phase I of the DSR had examined the various tasks related to one or more of the 15 DND objectives, which were in turn derived from national aims and policy themes. Phase II considered the range of force postures, in particular those involving fighting capability, that would be appropriate for Canada and postulated an illustrative force model within which further detailed planning could take place. The review also highlighted the urgency of executive decisions on the purchase of new equipment that was required if certain existing capabilities were to be maintained; these involved especially the continued use of tanks and long-range patrol aircraft (LRPA).

Following consideration of Phase II of the DSR, the government reaffirmed its commitment to the four priority roles stated for the Canadian Forces in the 1971

On-the-job training of an air defence technician.





Graduation ceremony, Royal Military College, Kingston, Ont.

White Paper, "Defence in the 70s". These are the surveillance and protection of our sovereign territory and coastlines, the defence of North America in co-operation with US forces, the fulfilment of such NATO commitments as may be agreed upon and the performance of such international peacekeeping roles as we may from time to time assume.

Other major decisions taken by Cabinet following submission of Phase II included: maintenance of the strength of the Canadian Forces at a level of 78,000 Regular and 22,000 Reserve Force Personnel, including a total of 2,000 men earmarked to meet current and foreseeable UN peacekeeping requirements; the continued maintenance in Europe of mixed army and air forces with adequate equipment, including a modern main battle tank, to contribute to NATO's collective defence of the central region; purchase of 18 Lockheed P-3 long-range patrol aircraft (LRPA) to replace the Argus aircraft in service since 1957; and studies for the eventual acquisition of new fighter aircraft to replace the CF-104, CF-101 and CF-5 aircraft on inventory and for a ship replacement program, which were to be considered by Cabinet early in 1976.

A significant element of the government's decision involved future funding of DND—namely an agreement that capital expenditures for defence were to be increased in real terms by 12 per cent each year for the next five years.

A third phase of the DSR is under way. It involves equipment acquisition studies, such as those mentioned above, as well as consideration of the necessary infrastructure and costs required to support the Canadian Forces effectively in the future. This may result in some consolidation in headquarters, bases and educational and logistic facilities, but only to the extent that operational capability is not impaired.

common conversion factors from SI metric to canadian imperial units

Length

1 mm	=	0.03937 in.
1 cm	=	0.3937 in.
1 m	=	3.28084 ft.
1 km	=	0.62137 mi.

Area

1 km ²	=	0.3861 sq. mi.
1 ha	=	2.47105 acres
1 m ²	=	0.000247 acres

Mass (Weight)

1 kg	=	2.204622 lbs.
1 kg	=	0.0011023 tons (short)
1 kg	=	0.000984 tons (long)
1 kg	=	32.1507 troy ounces
1 g	=	0.0321507 troy ounces
1 t	=	1.102311 tons (short)
1 t	=	0.9842065 tons (long)

Volume and Capacity

1 m ³	=	220 gal.
1 m ³	=	35.31466 cu. ft.
1 m ³	=	423.78 board feet
1 dm ³	=	0.423776 board feet
1 m ³	=	6.28982 barrels
1 litre	=	0.219969 gal.
1 dm ³	=	0.027496 bushels
1 m ³	=	27.4962 bushels

Mass in SI Metric to Average Capacity in Canadian Imperial Units for Common Field Crops

Wheat, soybeans, potatoes, peas	1 t = 36.74 bushels
Rye, flax, corn	1 t = 39.37 bushels
Rapeseed, mustard seed	1 t = 44.09 bushels
Barley, buckwheat	1 t = 45.93 bushels
Mixed grains	1 t = 48.99 bushels
Oats	1 t = 64.84 bushels
Sunflower seed	1 t = 91.86 bushels

Temperature

9/5 temperature in °C + 32 = temperature in °F

acknowledgements

Contributors

Robert B. Crozier (*Economic Trends in Canada, 1975-76*), Director of Policy Analysis for the Conference Board in Canada until his retirement in the summer of 1977. Previously senior economist, Economic Council of Canada and Assistant Director, National Accounts Division, Statistics Canada. Author of *A Guide to the National Income and Expenditure Accounts* (Ottawa, 1975) and various reports in the field of economics.

J.L. Granatstein (*History*), Professor of History, York University. B.A. Royal Military College, 1961; M.A. Toronto, 1962; Ph.D. Duke University, 1966. Author of: *The Politics of Survival: The Conservative Party of Canada 1939-45* (Toronto, 1967); (with R.D. Cuf) *Canadian-American Relations in Wartime* (Toronto, 1975, 1977); *Canada's War: The Politics of the Mackenzie King Government 1939-45* (Toronto, 1975); (with J.M. Hitsman) *Broken Promises: A History of Conscription in Canada* (Toronto, 1977); and other books and articles.

Gordon McKay (*The Climate*), Director, Meteorological Applications Branch, Fisheries and Environment Canada. B.Sc. Manitoba, 1943; M.Sc. McGill, 1953. This article is a contracted version of "Climatic Resources and Economic Activity", which appears in *Canada's Natural Environment: essays in applied geography*, edited by G.R. McBoyle and E. Sommerville (Methuen Publications, Toronto, 1976).

John S. Moir (*Religion*), Professor of History, Scarborough College, University of Toronto. B.A. Toronto, 1948; M.A., 1949; Ph.D., 1954; D.D., 1975. Author of: *Church and State in Canada West* (Toronto, 1959); *The Church in the British Era*, Vol. 2 of *A History of the Christian Church in Canada* (Toronto, 1972); *Enduring Witness: A History of the Presbyterian Church in Canada* (Toronto, 1974); and other books and articles.

Olav Slaymaker (*The Land*), Associate Professor of Geography, University of British Columbia. B.A. Cambridge, 1961; A.M. Harvard, 1963; Ph.D. Cambridge, 1968. Co-editor of "Mountain Geomorphology", *Tantalus*, 1972, and author of a number of articles on the physical geography of western Canada.

Gerald Taafe (*Arts and Culture*), Ottawa novelist and freelance journalist. Previously Editor of *The Montrealer* and Chief of Information for the Canada Council. Conceived and wrote the script for the film *Notes for a Film about Donna and Gail*, directed by Don Owen; wrote the script for *Girls of Two Summers*, the Canadian film entry in the 1966 Prix Formentor; and has published articles on all aspects of the arts.

Dixon Thompson (introduction to *The Environment*), Associate Professor of Environmental Science, Faculty of Environmental Design, University of Calgary. B.Sc. Alberta, 1964; Ph.D. Illinois, 1970. Previously Research Assistant to the AUCC Commission on Canadian Studies and Science Adviser, Science Council of Canada. Consultant and author of a number of articles on the Conserver Society.

Photographic Credits by page number

Cover. E. Otto/Miller Services

Frontispiece. Malak

3. Malak

5. George Hunter

7. George Hunter

8. E. Bork

9. Fred Bruemmer

11. Malak

12. Canada Centre for Remote Sensing

13. Malak

15. Deryk Bodington

17. E. Otto/Miller Services

18-19. Malak (4)

21. Sig Bradshaw

23. Murdoch Maclean

25. Sig Bradshaw

27. Barry Dursley/Photo Source

28. J.E. Lozanski

29. Malak

32. Malak

33. Malak

35. Parks Canada

37. Malak

38. Barbara Johnstone

41. Bryce Flynn

47. Gar Lunney

48. Sig Bradshaw

50. R. Gauthier/Miller Services

52. Deryk Bodington (3)

59. Bryce Flynn (3)

60. Deryk Bodington

62. Norman Lightfoot/Miller Services

63. Crombie McNeill/Photothèque (left); Bryce Flynn (right)

64. Malak

67. Deryk Bodington

68. Deryk Bodington

69. Malak

71. Bob Anderson

73. La Compagnie de Danse Entre-six

75. Ed Kucerak

77. National Film Board

78. Malak

81. National Museum of Natural Sciences

82. National Museum of Science and Technology

83. National Museum of Man

85. National Gallery of Canada

87. Bryce Flynn

89. Malak
91. Canada Cement Lafarge Ltd.
93. A. Douglas MacPhail/British Columbia Dept. of Education
95. National Ballet of Canada
97. Barry Dursley/Photo Source
99. Sig Bradshaw
104. Les photographes Ellefsen ltée.
109. G. Zimbel/Island Documentaries
113. Malak
114. Pat Morrow
115. Malak
116. Canadian Government Office of Tourism
117. Parks Canada
119. Parks Canada
123. Malak
124. Parks Canada
127. Imperial Oil Limited
129. National Research Council of Canada
131. Agriculture Canada
132. Agriculture Canada
135. Gar Lunney
137. Richard Harrington
139. George Hunter
140. George Hunter
141. G. Zimbel/Island Documentaries
143. Malak
144. Dept. of Energy, Mines and Resources
145. Spar Aerospace Products Ltd.
147. Health and Welfare Canada
148. Canadian Government Office of Tourism
150. Hans Blohm/Photothèque
151. New Brunswick Telephone Company, Limited
152. Alec Burns/Photo Source
153. Richard Vroom
154. Canadian Broadcasting Corporation
155. Canadian Broadcasting Corporation
156. Canada Post
158. Dept. of External Affairs
159. Wide World Photos
161. Dept. of External Affairs
164. Dept. of External Affairs
165. Wide World Photos
167. Malak
171. Polysar Limited
172. Sig Bradshaw
173. Malak/Photothèque
174. Alec Burns/Photo Source
175. G. Zimbel/Island Documentaries
177. E. Bork
178. Les photographes Ellefsen ltée.
179. Malak
180. Deryk Bodington

184. Les photographes Ellefsen ltée.
187. Gar Lunney
188. Fred Bruemmer
189. Malak
190. O.J. Dell/Photo Source
191. Murdoch Maclean
193. George Hunter
194. John Deere
195. Sig Bradshaw
196. Les photographes Ellefsen ltée.
197. Deryk Bodington
198. George Hunter/Photothèque
199. Deryk Bodington
200. O.J. Dell/Photo Source
203. George Hunter
205. Union Gas Limited
207. Malak
208. Sig Bradshaw
209. Bob Anderson
213. Gar Lunney
215. George Hunter
216. G. Zimbel/Island Documentaries
217. Gar Lunney
218. Northwestern Utilities Limited
220. O.J. Dell/Photo Source
221. George Hunter/Photothèque
223. Gulf Oil Canada Ltd.
225. Malak
226. John Reeves/Genstar (top); Gar Lunney (bottom)
227. George Hunter
229. Union Gas Limited
230. Central Mortgage and Housing Corporation
231. Bob Anderson (top); Gar Lunney (bottom)
232. George Hunter
233. George Hunter
234. Les photographes Ellefsen ltée.
235. George Hunter
237. Union Gas Limited
241. Bryce Flynn
242. Agriculture Canada
243. Barbara Johnstone
245. Malak
249. Hans Blohm/Photothèque
250. Malak
252. Malak
254. Les photographes Ellefsen ltée. (top); Barry Dursley/Photo Source (bottom)
255. Malak
256. Malak
257. Gar Lunney
258. Deryk Bodington
259. G. Zimbel/Island Documentaries
261. George Hunter

- 262. Malak
- 264. Murdoch Maclean
- 265. Malak
- 266. Sig Bradshaw (top); Audrey Giles/Photo Source (bottom)
- 267. Gar Lunney
- 271. Canada Cement Lafarge Ltd.
- 272-273. (1), (2), (4) Malak; (3) George Hunter
- 274. Malak
- 276. Sig Bradshaw
- 277. Gar Lunney
- 278. Malak
- 279. Bryce Flynn
- 280. Deryk Bodington
- 281. Air Canada
- 282. O.J. Dell/Photo Source
- 283. George Hunter
- 284. George Hunter/Photothèque
- 285. Alec Burns/Photo Source (top); Richard Harrington (bottom)
- 286. J.E. Lozanski
- 288. Malak (top); Les photographes Ellefsen ltée. (bottom)
- 289. O.J. Dell/Photo Source
- 292. Royal Canadian Mounted Police
- 293. Malak
- 295. Bryce Flynn
- 297. Malak
- 298. Bryce Flynn
- 299. Sig Bradshaw
- 301. Bryce Flynn
- 303. Royal Canadian Mounted Police (3)
- 305. Bob Anderson
- 308. *Vancouver Sun*
- 310. Malak
- 313. George Hunter
- 314. Bryce Flynn
- 315. Gar Lunney
- 316. G. Zimbel/Island Documentaries
- 317. Gar Lunney
- 318. Dept. of Industry, Trade and Commerce
- 319. Les photographes Ellefsen ltée.
- 321. Agriculture Canada
- 322. Agriculture Canada (top); Les photographes Ellefsen ltée. (bottom)
- 323. George Hunter
- 324. Gar Lunney
- 325. Malak
- 326. Audrey Giles/Photo Source
- 327. Barbara Johnstone (top); Bryce Flynn (bottom)
- 328. Malak
- 331. Malak
- 333. A. Bako/Health and Welfare Canada
- 334. A. Bako/Health and Welfare Canada
- 335. F. Stevenson/Health and Welfare Canada
- 336. Deryk Bodington

- 337. Deryk Bodington
- 338. D. Paterson/Health and Welfare Canada
- 339. D. Paterson/Health and Welfare Canada
- 340. Barry Dursley/Photo Source
- 341. Barbara Johnstone
- 342. D. Paterson/Health and Welfare Canada
- 343. Malak
- 344. Gar Lunney (2)
- 345. BP Canada
- 346. Monenco Ltd.
- 347. Deryk Bodington
- 348. Deryk Bodington
- 349. Alan Todd/Photothèque (top); Parks Canada (bottom)
- 350. Alec Burns/Photo Source
- 351. E. Bork
- 352. Agriculture Canada
- 353. (1) George Hunter; (2) G. Zimbel/Island Documentaries; (3) Howard Mandel/Photo Source
- 354. Agriculture Canada
- 355. Malak
- 357. Canadian International Development Agency
- 358. Canadian International Development Agency
- 361. Canadian University Service Overseas
- 362. Canadian University Service Overseas
- 363. Dept. of National Defence
- 364. Malak

Please note: Inquiries about photographs credited to Photothèque should be directed to the National Film Board of Canada.

- Acts of Parliament 291-300
 - British North America 34, 291-96, 300, 301, 304
 - Citizenship 307-08
 - Housing 229-32
 - Immigration 309-10
 - Labour 210-17, 313-16
 - Official Languages 53-57
 - Penitentiary 306
 - Regional Development
 - Incentives 319-20
 - Unemployment Insurance 215-17
- Adult continuing education 103
- Agriculture Canada 351-55
 - dairying 184-87
 - field crops 176-81
 - furs 187
 - horticultural crops 176-81
 - livestock 181-84
 - poultry and eggs 187
 - research 130-38
- Air transport 280-84
- Archives 88
- Arctic, the 6-12
 - research 148
 - sedimentary lowlands 6-7
 - shield 7-8
 - tundra 6
- Arts and culture 65-95
 - dance 72-75
 - exchanges 88-90
 - film 76-79
 - government policy 91-95
 - libraries and archives 86-88
 - museums and galleries 80-85
 - music and opera 74-75
 - publishing 75-76
 - theatre 71-72
 - visual arts 79
- Atmospheric Environment Service (AES) 23, 133-38
- Balance of international
 - payments 258-62
 - capital movements 258-60
- Bank of Canada 275-76
- Banking 275-79
 - chartered banks 276-77
 - credit unions and caisses populaires 277-79
 - Quebec savings banks 278
- trust and mortgage loans
 - companies 278
- Boreal Appalachian sub-region 11
 - forest 8-9
 - shield 10
- Cabinet, federal 294-96
- Canada Council 65, 74-75, 90, 93
- Canadian Broadcasting Corporation (CBC) 78, 154-55
 - Executive Service Overseas (CESO) 359-60
 - Forestry Service (CFS) 190-92
 - International Development Agency (CIDA) 358-59
 - Penitentiary Service 306
 - Radio-television and Telecommunications Commission (CRTC) 74-75
 - University Service Overseas (CUSO) 360-61
 - Wildlife Service (CWS) 136-37
- Capital expenditures 223-27
 - movements 258-60
- Census of Canada 39-45
- Central Mortgage and Housing Corporation (CMHC) 230, 232
- Churches 61-64
- Citizenship acquisition 307
 - development 307-08
- Claims, native 50-51
- Climate 20-29
 - as a liability 21-23
 - as a resource 20-21
 - effects on the economy 20, 24-28
 - research 28-29
- Climatology, applications of 24-30
 - to agriculture and forestry 24-25
 - to construction 26-27
 - to land use planning 26
 - to recreation 27-28
 - to resource development 26
 - to tourism 27-28
 - to transportation 27
- Coal 205-06
- Colleges, community 104-06
 - other 106-08
- Commons, House of 295-98
- Communications,
 - Department of 145-46, 150
 - research 145-46
 - systems 149-53

- Constitution, the 33, 291-98
 - British North America Act 34, 291-96, 300-01, 304
 - convention 294-95
- Consumer and Corporate Affairs, Department of 321-24
- credit 244-45
- price index 250-51
- Conventional thermal power 208
- Co-operatives 248-49
- marketing and supply 248
- production, fishermen's and service 249
- wholesale 249
- Cordilleran region 15-17
- Courts, federal 301-03
- provincial 304
- Credit, consumer 244-45
- Crops, field 176
- horticultural 176-81
- Cultural exchanges 88-91
- policy 91-95
- Currency 275-79

- Dairying** 184-87
- Dance 72-74, 95
- Defence, National, Department of 363-64

- Earnings** 212-14
- Eastern temperate forest 5, 12-14
- Economic trends 169-72
- Economy, the 169-289
- effects of climate on 20, 24-28
- Education 96-111
- administration of 97-98
- adult 103
- colleges 104-07
- elementary and secondary 97-103
- enrolment 102
- financing 108-11
- official languages 100
- organization of 98-101
- schools of nursing 106
- teachers 102, 107
- university 107-08
- vocational and technical 103
- Educational jurisdictions 96-97
- Electric power 206-09
- conventional thermal 208
- generation and utilization 209
- nuclear thermal 209
- research 206-08
- water power 206-08
- Employment 210-17
- earnings and hours of work 212-14
- federal programs 309-16
- labour force 210-11
- labour organizations 214
- Visa Regulations 310
- Energy, Mines and Resources, Department of 138-45
- production 197-209
- research 138-44
- resources 144, 197-209
- Environment, the 1-29, 133-38, 325-28, 343-50
- climate 20-29, 133-34
- conservation of 1-3, 133-38
- natural 1-29, 133-38, 343-50
- research 133-38
- urban 325-28
- Environmental design 1-3
- impact assessment 28-29
- Management Service (EMS) 136-38, 345-48
- Protection Service (EPS) 136, 345
- Exports 252-54
- External Affairs, Department of 157-67, 356-57
- External relations 157-68
- federal-provincial aspects of 165-66
- policy 157-68
- with Africa 162
- with Asia and the Pacific 160-61
- with Europe 159-60
- with French-speaking countries 165
- with Latin America 161-62
- with the Commonwealth 164-65
- with the Middle East 162, 163
- with the United Nations 163-64
- with the United States 157-58

- Farms. See Agriculture**
- Federal government, organization of 291-98
- finance 263-71
- research 125-48
- responsibilities and services 291-364
- Films 76-79
- Finance 263-79
- capital expenditure 223-28
- currency and banking 275-79
- education 108-11, 267
- federal government 263-71
- intergovernmental 263-71
- municipal government 274
- provincial government 271-74
- public 263-71
- Fisheries and Environment Canada 133-38, 343-50

—research	133-38
Forest industries	190-96
—logging	192
—ownership and administration of ..	191-92
—paper converting industries	195
—pulp and paper	194-95
—sawmills and planing mills	192-94
Furs	186-87

Gas, natural	140-44, 204-05
—production	204-05
—research	140-44
—resources	204-05
Galleries, art	79, 80, 84
Geography, physical	1-17
—Arctic tundra region	6-8
—Cordilleran region	15-17
—eastern temperate forest region	12-14
—Prairie region	14-15
—subarctic parkland and boreal forest region	8-11
Geological Survey of Canada (GSC) ..	197
Government	291-99
—federal	291-98
—finance	263-74
—local and municipal	299
—provincial and territorial	298-99
Governor General	294-96
Grains	176, 318
Gross National Product (GNP)	169-72

Health and Welfare Canada	332-42
—care	332-36
—insurance	333-34
—research	147-48
—services	332-36
History	31-38
Hours of work	212-14
House of Commons	291-98
Housing	229-32
Hydro-electric power	206-08
Hudson Bay lowland sub-region	9

Immigration	309-10
Imports	255-57
Indian and Northern Affairs, Department of	46-51, 117-20, 148
—native peoples	46-51
—northern research	148
—Parks Canada	117-20
Indians	46-48

Industrial growth and change	218-22
Industry, Trade and Commerce, Department of	317-18
—capital expenditures	223-28
—development	317
—housing	229-32
—manufacturing	233-38
—research	127-28
Inflation	169-72
Insurance	279
—casualty	279
—hospital	333-34
—income	337-40
—life	279
—medical care	334
—unemployment	215-17
Interior Plains sub-region	10-11
International Development Research Centre (IDRC)	361-62
—payments	258-62
—trade	252-57
Inuit	48-50
Inuitian sub-region	6-8

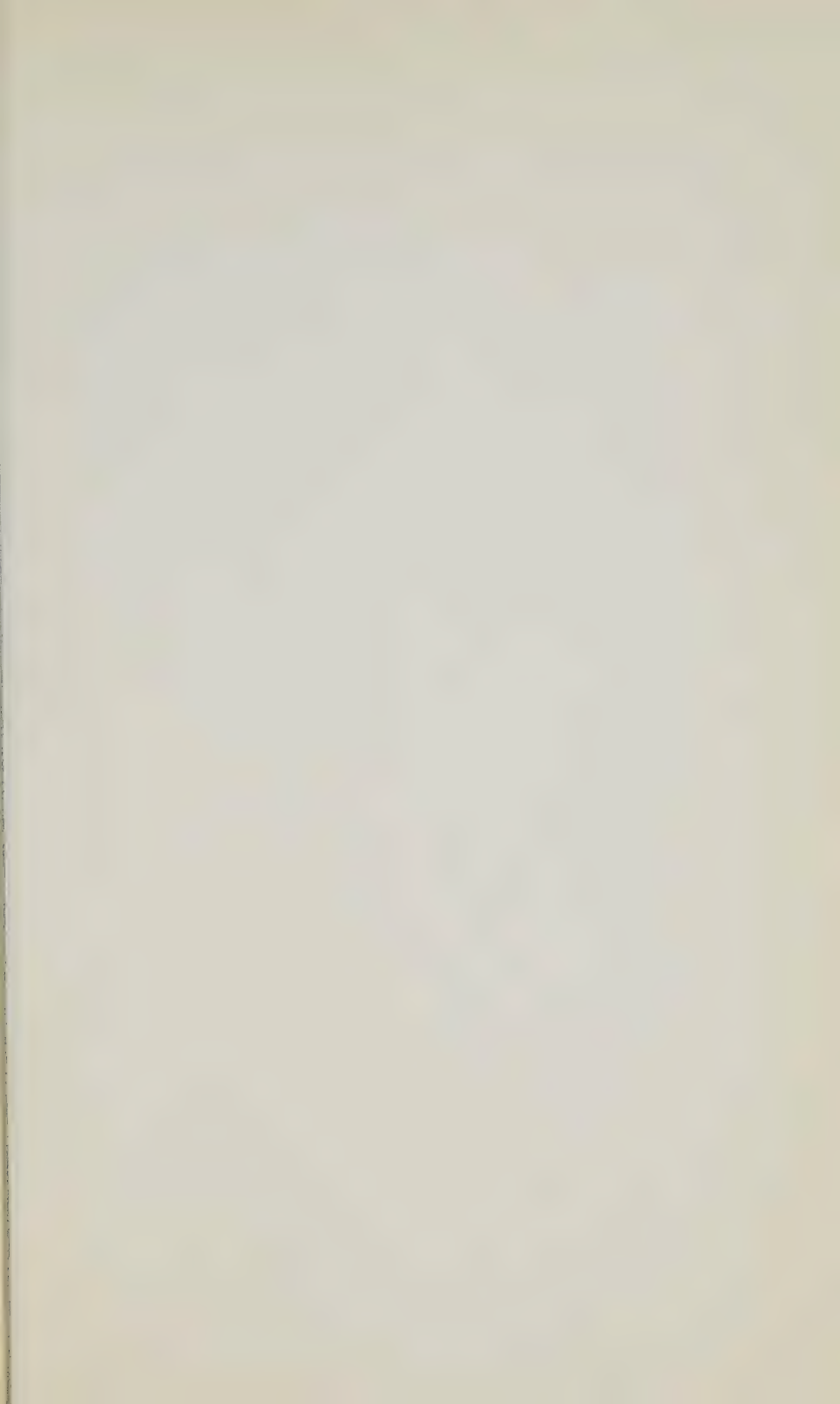
Judiciary	301-02
------------------------	--------

Labour, Department of	313-16
—code	313-14, 316
—force	210-11
—legislation	313-14
—organizations	214
Land, the	4-19
—Arctic tundra region	6-8
—Cordilleran region	15-17
—eastern temperate forest	5, 12-14
—Prairie region	14-15
—subarctic parkland and boreal forest	8-11
Land use	1-3, 138, 326
Law making	300-01
—reform	301
Leader of the Opposition	295
Legal system, the	300-06
—courts	301-04
—judiciary	301-02
—parole	306
—penitentiaries	306
—police	304-05
—profession	304
Legislatures	296-99
Leisure	112-24
—events and attractions	113-14
—government programs	116
—parks	117-21
—recreation	115-16

- Lieutenant Governors 293
- Libraries 86-87
- Livestock 181-84
- Local government 265-74, 299
 - finance 265-74
- Logging 192
- Lowlands, Arctic sedimentary 6-7
 - Hudson Bay 9
 - St. Lawrence 14
- Manpower and Immigration,**
 - Department of 309-12
 - centres 311-12
 - job creation 312
 - services for employees 312
 - services for employers 311-12
- Manufacturing 233-38
- Medical Research Council 147-48
 - care programs 332-36
 - insurance 333-34
 - research 147-48
- Minerals 138-40, 197-203
 - production 197-203
 - research 138-40
 - resources 197-203
- Motor vehicle transport 286-88
- Multiculturalism 57-60
- Municipal government 299
 - finance 263-74
- Museums 80-86
- Music 65, 66, 74-75
- National Capital**
 - Commission 56-57, 116
 - Film Board 58, 77-79
 - Gallery 84
 - Historic Parks and Sites 118-19
 - Library 86-87
 - Museums 80-85
 - Parks 117-18
 - Parole Board 306
 - Parole Service 306
 - Research Council 125, 126, 128, 145, 146
- Native Peoples 46-52
 - claims 50-51
 - Indians 46-48
 - Inuit 48-50
- Natural wealth 173-209
 - agriculture 173-87
 - fisheries 188-90
 - forestry 190-96
 - minerals and energy 197-209
- Nuclear power 209
- Nurses training 106
- Official Languages Act** 53-57
 - Commissioner 53, 57
- Oil 140-42, 204-05
- Oilseeds 176, 318
- Opera 74-75
- Parks** 117-21
- Parliament 291-98
 - House of Commons 291-98
 - Senate 291-98
- Parties, political 297-98
- Pensions 329-31, 337-42
 - Canada 337, 338
 - Quebec 338
 - veterans 329-31
- Petroleum 140-42, 204-05
 - production 204-05
 - research 140-42
 - resources 204-05
- Plains, Interior 10-11
- Police 304-05
 - municipal 304
 - provincial 304-05
 - Royal Canadian Mounted (RCMP) .. 305
- Population 39-60
 - multiculturalism 57-60
 - native peoples 46-52
 - official language groups 53-57
 - vital statistics 39-45
- Postal service 156
- Poultry and eggs 185, 187
- Prairie region 14-15
- Price index, consumer 250-51
- Prime Minister 294-96
- Privy Council 294-95
- Provincial government 298-99
 - finance 271-74
- Public Archives of Canada 88
- Service Commission 56
- Publishing 75-76
- Pulp and paper 194-96
- Queen, the** 294, 296, 297
- Railways** 285-86
- Recreation 115-16
- Regional Economic Expansion,
 - Department of 319-20
- Religion 61-64
- Research 125-48
 - agricultural 130-33
 - climatological 133-34
 - communications and space 145-46
 - energy, mines and resources 138-45
 - environmental 133-38

—fisheries	134
—government	125-48
—industrial	127-28
—medical and health	147-48
—northern	148
—university	128
Resource development	173-209
Sales	239-47
—direct	242-43
—retail	239-42
—wholesale	245-47
St. Lawrence lowlands sub-region	14
Sawmills and planing mills	192-94
Science and Technology,	
Ministry of State for	125-26
—Council of Canada	126
—federal government	125-48
—industrial	127-28
—international	129-30
—policy	125
—university	128
Scientific activities	130-48
Secretary of State, Department	
of the	54-56, 58-60, 115, 307-08
Senate, the	291-98
Service co-operatives	249
—trades	247
Shield, boreal	10
—Canadian	10
—temperate	13
Social security	337-42
Solicitor General,	
Ministry of the	305-06
Space research	145-46
Statistics Canada	126, 258
Subarctic and boreal shield	
sub-region	10
—parkland and boreal forest region	8-9
Supreme Court of Canada	302
Taxes	263-74
Telecommunications	149-53
Teachers	102, 107
—training	107

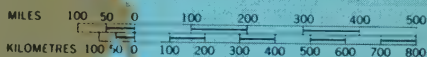
Temperate Appalachian-Acadian	
sub-region	13
Theatre	71-72
Tourism	121-24
—Canadian Government Office of	122
Trade	239-62
—balance of international	
payments	258-62
—consumer credit	244-45
—consumer price index	250-51
—co-operatives	248-49
—direct selling	242-43
—domestic	239-47
—international	252-57
—retail	239-42
—service	247
—wholesale	245-47
Transport, Ministry of	280-82
Transportation	280-89
—air	280-84
—motor vehicle	286-88
—rail	285-86
—water	289
Treasury Board	53-54
Tundra	6
Unemployment	210-17
—Insurance Commission	215-17
United Nations	162, 163-64, 359
Universities	107-08, 128
—education	107-08
—research	128
Urban Affairs, Ministry of	
State for	325-28
Veterans Affairs,	
Department of	329-31
Vital statistics	39-45
Visual arts	79
Wages	212-14
Water power	206-08
—transport	289
Wholesale co-operatives	249
—trade	245-47





Canada

SCALE 1:20,900,000 OR ONE INCH TO 330 MILES



Federal Capital **Provincial Capital**









